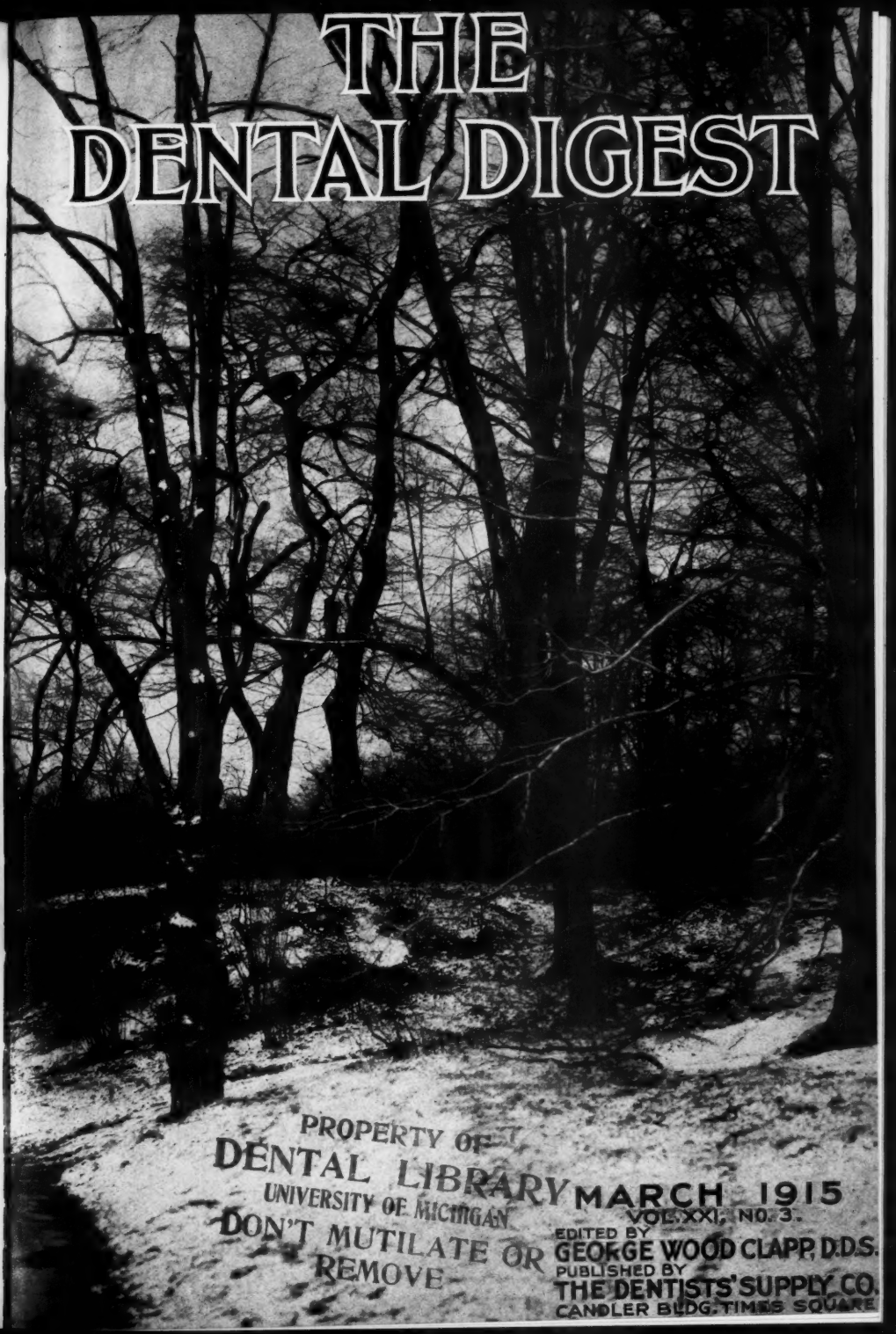
THE DENTAL DIGEST



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GEORGE WOOD CLAPP, D.D.S., Editor

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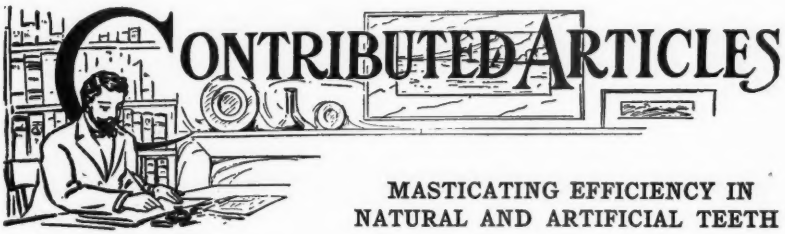


MASTICATING EFFICIENCY IN NATURAL AND ARTIFICIAL TEETH

BY ALFRED GYSI, D.D.S., ZURICH, SWITZERLAND

Professor at the Dental School of the University of Zurich

(LITERARY COLLABORATION BY GEORGE WOOD CLAPP, D.D.S.)

ARTICLE III

THE BITES IN NATURAL AND PORCELAIN TEETH

The theories which have been held as to the relative depths of the bite in different teeth of the same set are so incomplete as not to afford a true understanding of this most important function.

Since Bonwill's time the relative depth of bite in different groups of natural teeth has been represented by the diagram in Fig. 16, in which the condyle is represented as a fixed point, and the central incisors are shown in central occlusion. It is proposed to show that while this diagram is not exactly inaccurate, it is very incomplete.

The different positions of the condyles in biting and mastication cannot be adequately represented by the fixed point C in the illustration on page 140. The condyles are by no means fixed points. The condyloid articulation is the loosest articulation in the body. It permits the con-

dyles to move forward, downward, inward and outward, through a considerable distance. If a condyle is to be represented in such an illustration it must be by several points which will indicate its proper location in the different movements of articulation.

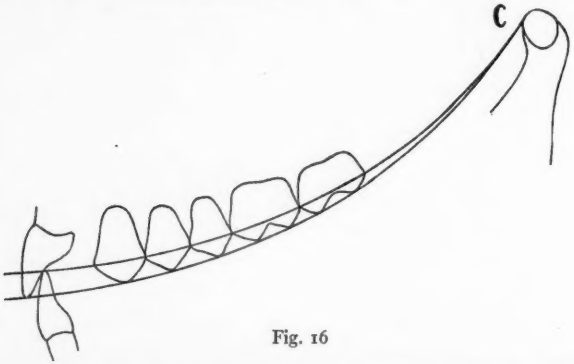


Fig. 16

The condyles and condyle paths are not determining factors in the depth of bite of the teeth. The depth of bite is determined by the formation of the teeth and certain movements which are soon to be described. The natural teeth erupt with the occlusal surfaces formed and hard.

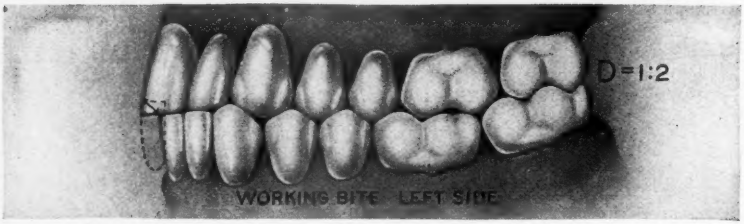


Fig. 17

The condyle path as it exists at the time exercises great influence in guiding the erupting teeth to proper positions in the arch. When the teeth have assumed permanent positions in the arch the condyle paths exercise an influence in favor of perfect articulation by assisting in guiding the wear.

There is reason to believe that the condyles exercise no other influence on the depth of bite than the guiding and wearing influences just mentioned, and that the movements of the condyles during articulation are determined by the formation and articulation of the teeth. This does not in any degree minimize the importance of correct condyle movements in prosthetic restorations. The patient's glenoid fossæ and condyle movements were shaped by the teeth when in place. When the natural teeth

are gone, they remain for a time unchanged. If the dentist can reproduce these movements in an articulator, he may select and arrange teeth to harmonize with them. This makes the wearing of dentures much easier

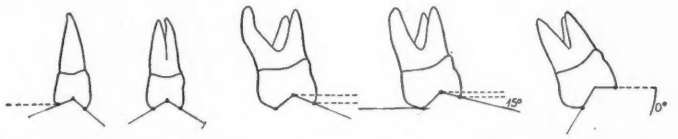


Fig. 18. Diagram of a set of natural upper posteriors, showing that the inclination of the whole occlusal surface of each tooth to the occlusal plane greatly affects the depth of the working bite, by affecting the inclination of the grooves from the fossae to the buccal surfaces

for the patient and imparts to the porcelain teeth the maximum of attainable efficiency.

WHAT DETERMINES THE DEPTH OF BITE

The depth of bite is the vertical distance the teeth "lift" in articulation. There are three depths of bite, one corresponding to each of the

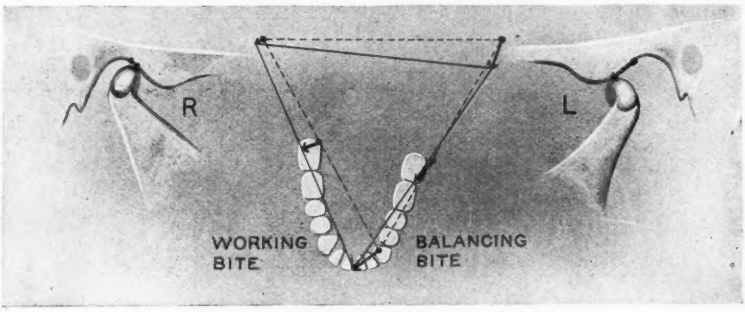


Fig. 19. Diagram of the movements of the condyles and teeth in the working and balancing bites. By comparing the length af the arrows at the second molars on the two sides, it will be seen that the movement of the teeth on the working side is much shorter than that on the balancing side. R—Vertical movement of advancing condyle. L—Vertical movement of stationary condyle.

principal functions of articulation. The depth of each of these bites is determined by the formation of the tooth surfaces in articulation.

The shallowest of the three bites is exhibited on the side of the mouth toward which the mandible is thrown. Let us call this "the working side." The depth of this bite is determined by:

1st. The inclination of the whole occlusal surface of the tooth to the sagittal plane of the body. If this inclination is properly determined when porcelain teeth are made, the very shallow bite which nature prefers in this articulation can be reproduced.

2nd. By the fact that the movement of the cusps on the working side is very short, as is shown in illustration No. 20.

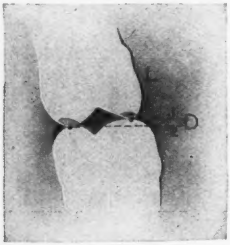


Fig. 20. Not only is the movement of the cusps on the working side shorter than that on the balancing side, but cusps articulate with grooves, greatly lessening vertical movement

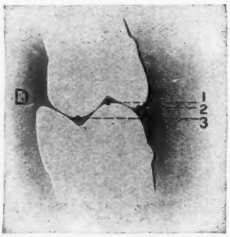


Fig. 21. The depth of the working bite is equal to the distance from 1 to 2 in this diagram. It will be seen that this distance is less than the height of the cusps of either set

3rd. Perhaps the most important factor in determining the shallow bite is the fact that the cusps of one set of teeth on the working side articulate only with short and relatively flat grooves in the opposing set. Cusp does not climb cusp. The "lift" of the articulating grooves as they

Fig. 22. Diagram of the incising bite

go outward from the fossæ to the buccal and lingual margins is very slight, and the teeth lift only the vertical distance that the walls of the grooves compel. This is perhaps not more than one-third of the vertical height of the articulating cusps.

THE BALANCING BITE

While the very shallow bite is exhibited on the working side of the mouth, there is being exhibited on the other side, which we shall call the balancing side, a very different form of bite. The surfaces here in articulation are quite different, and the movements of articulation differ also. The movement here is longer; the long lingual cusps of the upper

set here articulate with the long buccal cusps of the lower set. While the more important cusps of one set follow grooves in the opposing set,

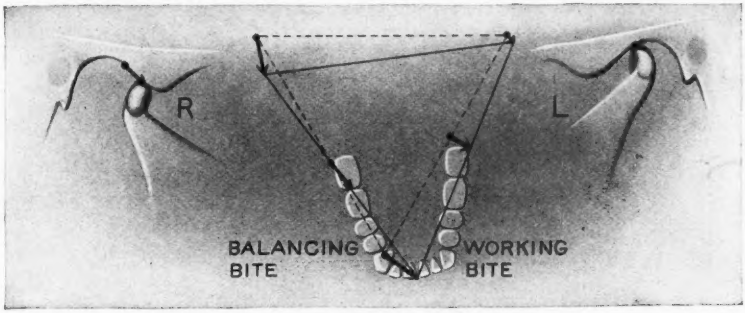


Fig. 23.

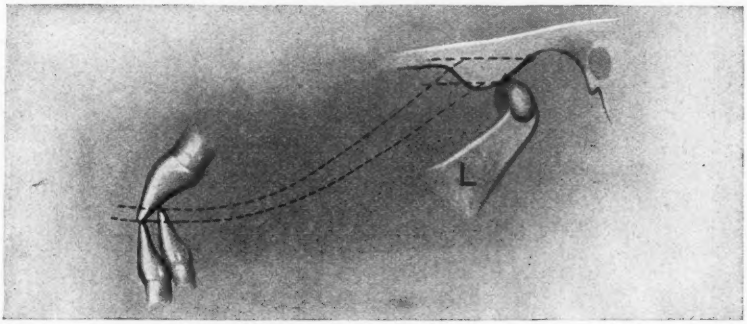


Fig. 24. Diagram of the depth of balancing bite in different locations. It will be seen that this bite deepens from before backward

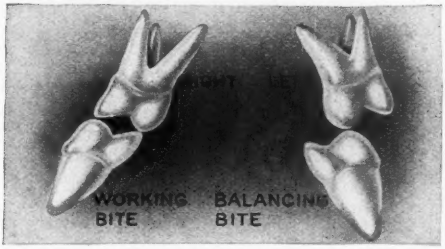
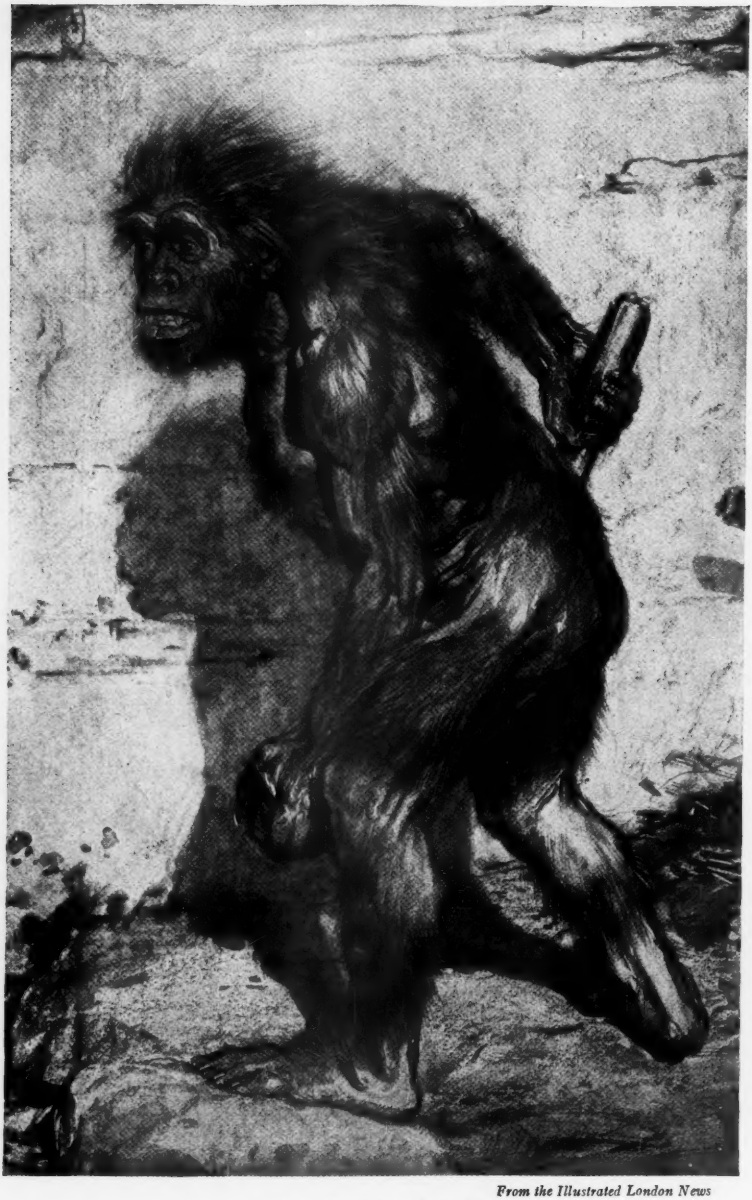


Fig. 25. Diagram of the relations of the teeth in the balancing bite, as seen in a cross section of the jaws at the location of the first molar

the grooves lift more and the movement is much longer. This bite is comparatively shallow in the anterior teeth which change level but slightly. It grows steadily deeper as we go backward along the teeth and in the molar region is the deepest bite ever exhibited by the posterior teeth.

(This article is expected to be continued in the April number).

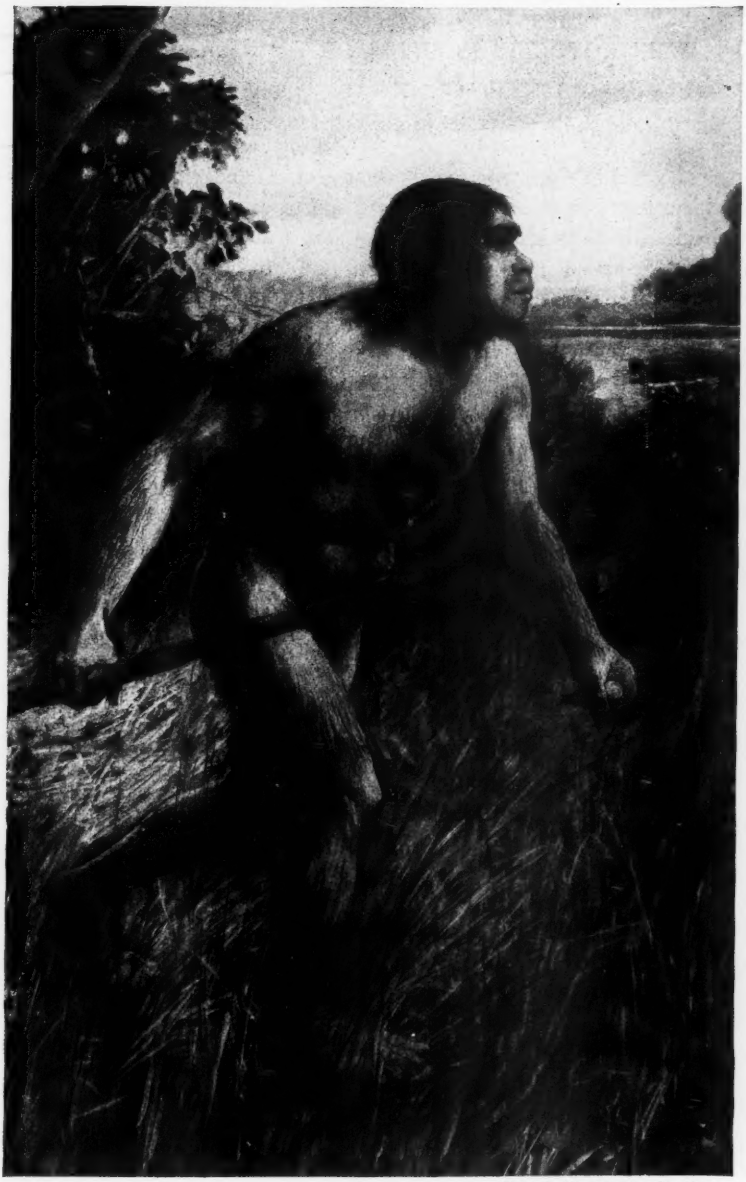


From the Illustrated London News

PRE-COOKING MAN (NO. 1)*

This illustration is probably as accurate as can be gotten. This man must have been about 5ft. 3½ in. high and could not assume the upright position of the present time. He obtained his food irregularly and with difficulty. He is believed to have lived 20,000 years ago

*Through a clerical error, the descriptions of these two cuts were transposed in the February issue. They are here printed correctly for the benefit of any who desire to preserve them.



From the Illustrated London News

PRE-COOKING MAN (NO. 2)

This illustration shows ancient man as reconstructed from the study of the Piltdown skull, upon which Dr. J. Leon Williams has done so much valuable work. We have no means of telling exactly when he lived but it must have been at least 20,000 years ago, perhaps several times that. He has the prognathous jaw and probably tore food, uncooked, from the mass

WHY NOVOCAIN IS SUPERIOR TO COCAINE AS AN ANÆSTHETIC

R. O. Pray, D.M.D., Sheridan, Oregon.

The growing sentiment against the use of cocaine and its preparations in this country, is making the use of this drug more and more objectionable in daily practice. In fact some states are beginning to legislate against the use of arsenic and cocaine. To forbid the use of the old standby arsenic and the cocaine preparations, seems at first glance to be working a hardship on some of our brethren. But this is not true, for the quicker we discard the use of these two drugs, the better off we shall be. To my notion, arsenic has long been superseded by newer and better methods for devitalization, and we could get along very nicely if we never used arsenic. And cocaine, while it has many good qualities, has a substitute in novocain that is decidedly preferable, owing to the fact that it is nontoxic and has no after effects, even though several times the amount is used in proportion to the limit in cocaine. Novocain has the same action upon the nervous system as cocaine, is fully as powerful and *seven* times less toxic. The general effects of novocain absorption are not noticeable, neither the circulation, respiration nor heart action being affected. Novocain solutions in combination with suprarenin to control the bleeding, are absolutely non-irritant and a 2% solution may be freely used without the slightest untoward symptoms. In my practice I have used as much as 150 minims, in patients that showed a marked idiosyncrasy for cocaine, without the slightest ill effects.

I will now cite three cases, patients who had a susceptibility to cocaine, that have recently been under observation during novocain experimentation.

Case 1. A man 45 years of age. Appeared for devitalization of a bicuspid and an extraction of some molar teeth. In devitalizing the biscuspid I used *cocaine* and pressure. The dam was not applied and a small amount of the drug leaked out into the mouth, absorption took place and was followed by a complete collapse. After he had recovered sufficiently I dismissed him, telling him to return the following day for the extractions. At the next sitting I injected over 69 m. of a 2% solution and at no time during the extractions was there the least indication of anything alarming. Previous to the extracting the patient had told me that cocaine had always given him trouble and he had meant to warn me against the use of it but had forgotten to do so.

Case 2. That of a woman 26 years of age. Had a history of cocaine susceptibility, always had made her very weak and sick at her stomach.

This case presented for the extraction of eleven roots and teeth. Patient appeared very nervous and apprehensive of the needle, even though I had assured her that the preparation would not affect her. Injected 120 m. of novocain and took out the teeth. Patient felt no pain and declared that she felt fine. No soreness of the gums at any time during the process of healing.

Case 3. This was purely an experiment to determine the effect of the novocain. The patient, a young lady, was one in which the slightest trace of cocaine would cause a complete collapse. Her physician had previously worked three hours over her following a collapse from a weak solution used in the eye. He brought her to me for an extraction and incidentally to note the result of the novocain preparation. We injected about 50 m. and at no time was there any perceptible action upon the heart, respiration, or circulation.

I use one of the proprietary preparations of novocain and I can make all extractions absolutely painless by simply injecting plenty of the solution. Doubtless some of you have witnessed that class of advertiser who stands on the street corner and takes out any number of teeth entirely without pain. And you have sometimes wondered how he managed to get away with it. Well, they usually have a weak solution of novocain and they inject from 3 to 12 hypodermics full of this, and you will notice that they talk all the time in order to allow time for their solutions to take effect. But any one can do this; all that is necessary is to be sure that you inject plenty, use all you want, don't be afraid of novocain for almost any amount can be safely used. Only after injecting wait a few minutes, give the drug a chance to take effect, don't pick up the forceps as soon as you lay away the hypodermic—wait and you will get that tooth without hurting your patient.

The method of procedure for absolute anæsthesia is simple. Use a high pressure hypodermic with reinforced needle, inject just below the gum margin, engaging the peridental membrane, and inject freely in between the teeth. In inter-osseous anæsthesia force the needle through the process toward the end of the root; if necessary make an opening with a round bur and inject. This will give complete anæsthesia, so that you can grind, cut sensitive dentine or entirely extirpate the pulp.

AN INCIDENT IN PRACTICE.

"Doctor! I wish that you would examine my teeth—my husband says that I have a bad taste in my mouth."—EDWARD D. RALPH, D.D.S., Jamaica, N. Y.

THE RELATION OF MEDICINE TO DENTISTRY

By William J. Lederer, D.D.S., New York City
Dental Consultant to the German Hospital in New York

THIRD PAPER

SOME DISEASES OF NUTRITION AND THE MOUTH AND TEETH

Diseases of nutrition are the result of disturbances of the chemical and physical processes, which collectively are known as metabolism. It can readily be seen that modification of such vital processes effect the organism profoundly and that as a result all structures of the body may become involved.

The mouth, alveolar structures and jaws are not exempt from exhibiting at times symptoms of metabolic disease.

In studying metabolic disease it is necessary to first establish normal metabolism.

Metabolism can be defined as "That group of phenomena whereby organic beings transform foodstuffs into complex tissue-elements," in other words as "Nutrition." Foods, then digestion and assimilation as well as the excretion of waste products, play a part in metabolic disease.

The study of this class of diseases demands not only an intimate knowledge of the physiology and pathology of the tissues and organs involved, but one must master the chemistry of cell activity and its products and understand the chemical and physical relation of these products to the organism itself.

It is not within the scope of this paper to enter into the physiology, pathology, and chemistry of digestion and the following résumé of the digestive function should merely serve to better illustrate metabolic disease.

We have as will be remembered, mouth, gastric and intestinal digestion, the food being masticated and insalivated in the mouth for the purpose of dissolving certain elements, and macerating the material to facilitate other digestive processes which follow; in the mouth starch is converted into maltose by the action of the salivary ptyalin.

The importance of thorough mastication is frequently underrated and food swallowed in large pieces is resistant to the action of the gastric juice, which may induce indigestion.

The bolus now passes into the stomach where the gastric juice acts upon the proteids, converting them into peptones, while the amylolytic action of the saliva is continued for some time.

Milk is also acted upon here by rennin, which coagulates the casein and forms curd. After the food has been converted into chyme in the

stomach, it passes through the pyloric orifice into the small intestine where the pancreatic and hepatic secretions convert chyme into chyle.

The pancreatic juice contains four ferments, trypsin, amylopsin, steapsin and a milk-curdling ferment; trypsin like pepsin acts upon proteids converting them into peptones; amylopsin converts starch into maltose. Steapsin splits fats into fatty acids and glycerine, these fatty acids unite with alkaline bases forming soaps. The pancreatic juice also emulsifies fats. The succus entericus alters the character of the sugars, converting maltose into glucose. The bile acids in the digestion of fats, renders the intestinal contents alkaline and has antiseptic powers against certain bacteria and has the power to change glucose into glycogen, in which form it is stored up in the liver as reserve material. Another function of bile is the reduction of proteid waste to urea.

After the foodstuffs have been thoroughly acted upon by all digestive ferments, the chyle is taken up by the chyliferous vessels of the intestines and enters the general system by way of the portal circulation. The residue of undigested material, the fæces, pass along the large intestine and are excreted via rectum by the anal orifice.

If these processes are carried on normally digestion is normal, and the organism barring other disease is in good health, if, however, the body is not able to properly elaborate the foodstuffs (that is if there obtains a defect in the chemistry of nutrition) metabolic disease is the consequence.

Diabetes, gout, rheumatism, rachitis, scurvy are diseases of nutrition which may affect the mouth, teeth, and jaws and therefore should be of interest to the mouth specialist.

In the study of nutritional disease there are three factors which must be considered. First the organs which are actively engaged in nutrition, secondly the food ingested, and lastly the chemical elaborations of the foodstuffs in the digestive apparatus.

A healthy economy functionating normally can elaborate a certain amount of foodstuffs within a given period of time. This fixed quantity in health may fluctuate within certain limits, but if these limits are exceeded the body is not able to burn up the quantity of food taken in and abnormal conditions result. If these abnormalities are persistently maintained pathologic conditions may ensue.

Thus for example, if a person ingests excessive amounts of carbohydrates or cane or grape-sugar, the body is not able to utilize all this material. All the glucose produced cannot be stored up as glycogen and the excess is eliminated as glucose in the urine. Such a condition is known as glycosuria (sugar in the urine).

This form of glycosuria taking its origin from faulty alimentation is

designated as alimentary glycosuria and is in reality not pathologic. It can be controlled by the correction of the diet.

Glycosuria can also be produced by the administration of phloridzine (a bitter crystalline glycosuria occurring in the root and trunk of fruit trees) which drug acts upon the kidney structure permitting the normal glycogen of the body to escape as glucose in the urine. This glycosuria will begin 15-30 minutes after the administration of the drug and last for about three hours. (Hensel, Weil and Jelliffe.) When the administration of phloridzine is stopped the glycosuria ceases. This type of glycosuria is known as "phloridzine" or artificial glycosuria."

Besides alimentary and artificial glycosuria which have both been termed "false glycosuria" there exists a third type, "true glycosuria" which coupled with other symptoms is one of the main signs of diabetes. In diabetic glycosuria we deal with a perverted metabolic process, which is frequently accompanied by buccal lesions. Diabetes, therefore, is of interest to the dental specialist.

DIABETES

is a disease of nutrition characterized by the habitual discharge of excessive amounts of urine and constant thirst. There are several types of diabetes. Physicians primarily distinguish two types, diabetus mellitus and diabetes insipidus. If the term diabetes is employed without qualification the word indicates diabetes mellitus.

Diabetes mellitus (sweet diabetes—*mel*, honey) is marked by the appearance of glucose in the urine, by frequent voiding of urine (polyuria), excessive thirst, ferocious appetite with impairment of nutrition and in some cases of marked emaciation, and loss of sexual power.

Though diabetes mellitus is as old as Christianity and has been studied since the 17th century, its causative factors are not understood to this day. It is an established fact that lesions of certain portions of the nervous system (the so-called diabetic centre of Claude Bernard in the medulla) are followed by glycosuria and that certain alterations in the islands of Langerhans in the pancreas are followed by the same symptoms, but a clear conception of the etiology of diabetes mellitus has not been established.

Just as the etiology has not been determined accurately, so little is the pathology of this disease understood.

Hare in his "Practice of Medicine" says:—

"It is a well recognized fact that in all human beings glycogen is prepared from carbohydrate foods, and even from proteids and fats, and deposited in the liver and in the muscles where it lies as in a storehouse as reserve food. It also circulates in the healthy blood stream in the pro-

portion of 1:1000 and is so carried to various parts of the body for nutritional purposes.

"There are many conditions which produce loss or leakage of this substance in the form of glucose in the urine. Thus glycosuria, or the mere presence of sugar in the urine, may follow the ingestion of an excess of either cane or grape sugar or an excess of carbohydrate food. Under these circumstances it is simply an overflow of material which the system cannot utilize. This being true, it is readily conceivable that in certain states of disease the system may be unable to utilize the normal amount of glycogen and therefore it escapes from the body.

"This view receives support from the theory advanced by Loewi and Kalisch, who believe that there is in the organism a body or ferment or agent, which binds the glycogen in the tissues in such a form that it does not appear in the blood in excess. If for any reason this binding body (Bindekoerper) is diminished in power an excess of glucose passes to the kidneys and so escapes from the body."

"The pathology of the disease as far as we know to-day, can, perhaps, be summed up in the following words:—In certain individuals there exists, as a result of a congenital or acquired defect in the metabolic functions of the body, an inability to utilize for the purpose of nutrition all the carbohydrate material taken in as food. Such persons suffer from simple glycosuria. If this defect becomes more marked they gradually lose the power to retain any noteworthy quantity of carbohydrates ingested and when this condition develops they speedily emaciate and lose vital resistance. Finally by reasons of further defect in the organs whose functions govern nutrition, such persons actually convert their body fat and proteid tissues into sugar and pass it from them in the urine, in which cases death soon closes the scene."

The complications and sequelæ of diabetes are manifold. Some of these depend upon the fact that the constant loss of sugar lowers nutrition and decreases normal resistance, to various infectious diseases. Sweet has shown that the blood loses its bactericidal properties in diabetes. The first symptom of diabetes may be the development of a crop of boils and when the urine is examined glucose is found. At times diabetic gangrene develops as the result of a slight skin lesion. Alveolar sockets which refuse to heal up should be viewed with suspicion.

The death in diabetes mellitus may be directly due to perverted metabolism or one of the acute infectious diseases as pneumonia, tuberculosis, or septicæmia with or without carbuncle which take the patient away. Diabetic coma is another cause of death.

Diabetic coma is one of the acute nervous complications wherein the patient lies in an unconscious state, wherefrom he cannot be aroused by

external stimuli and is undoubtedly of toxic origin; probably due to the presence of one or more abnormal acids in the blood. Coma may come on suddenly or gradually, though in the gradual cases, exitus is but a question of hours as a rule. There are many other complications and sequelæ of diabetes, as optic atrophy, diabetic retinitis, neuritis, not infrequently pseudo-tabic symptoms develop, but space does not permit to go into full details, which can be found fully described in medical literature.

There are certain factors which predispose to perversion of metabolism producing diabetes mellitus.

1. Heredity. A parent may hand down to the offspring certain defects which will interfere with the proper utilization of carbohydrates.

2. Errors in diet as to both food and drink.

As pointed out before, dietary excesses may produce a primary glycosuria, which in time may become the foundation for true diabetes mellitus.

3. Profound nervous worry and mental anxiety may disturb the nervous mechanism governing metabolism.

4. Certain injuries to the central nervous system may so result from severe trauma of the head or the growth of an intracranial tumor may produce diabetes.

5. Certain infectious diseases may produce temporary glycosuria which disappears with the true disease, or persists and becomes true diabetes.

6. Diathetic diseases, such as gout, undoubtedly cause or predispose to diabetes in some cases, but whether this influence is direct or simply a sign of general perversion of metabolism is not known. (Hare.)

The symptoms of diabetes mellitus of course vary in different cases. In many cases glycosuria exists for a long time without the patient's knowledge, this may or may not be accompanied by a pyorrhœa alveolaris, hence it is extremely important for the dentist to carefully study the physical state of his patients and pyorrhœa treatment should never be undertaken unless a previous urinalysis has been made.

One of the first symptoms which the patient notices as a rule is the frequent voiding of large amounts of urine; he develops more or less thirst and loses sexual desire and power. This is followed by feeling languid and inert and he may develop an abnormal appetite and is frequently constipated. The thirst, polyphagia, with the loss of strength and flesh are usually in direct proportion with the polyuria and degree of glycosuria. (The urinary changes will be described in a subsequent paper on "Urinalysis as of Interest to the Dentist.")

Some years ago the writer read a paper before the Stomatological Section of the American Medical Association on "Changes in the Salivary Secretion Affected by Systemic Disease." The data for this paper were

gathered from salivary analysis of 158 cases of diabetes mellitus made by Dr. H. Stern and the writer. The reaction was found to be acid in forty-seven patients, alkaline in ninety-two patients, and neutral in eight patients. Sugar was found in the saliva of eighty-five patients, while no glucose was found in seventy-three patients, which findings demonstrated, as those of others (Naunyn, Mosler, Kulz, Frerichs, von Noorden), that the saliva is not always glycosuric in diabetes.

Grunert, of Berlin, who made a careful study of buccal symptoms of diabetes, frequently found in recent cases of diabetes small white or grayish papules upon the gums and palate, which offer considerable resistance and when removed leave a red bleeding spot. Von Noorden considers these Thrush. He also observed small vesicles in the mouth of diabetics which upon opening leave small ulcers causing burning pain and producing a very unpleasant odor.

Another symptom of diabetes is the chloroform-like or sour apple odor of the patient's breath.

If the polyuria is marked the tongue becomes glazed, dry and raw in appearance.

The deposits of tartar upon the teeth of diabetics are as a rule light in color.

Another point of interest to the dentist is the fact that in diabetes there often obtains a slow process of healing in wounds, and an alveolar socket which if it does not heal in due time (provided there is no local irritation), should call to mind the possibility of constitutional disease.

The care of the mouth in diabetes is important. Diabetics should use mouthwashes faithfully: the writer finds the wash recommended by Ortner extremely valuable.

℞ Beta naphtholis 0.3
Natrii borici 30.0
Aq. Menth. pip 150.0
Aq. dest. 960.0
S. Use as mouthwash 4–5 times daily.

If the gums are very painful the following is useful

℞ Tr. Opii 30.0
Kalii chloras,
Natrii borici . . . . . āā 75.0
Aq. Aurantii flor. 30.0
Aq. destillat 960.0
S. Use as gargle.

Diabetes insipidus is marked by the passage of large quantities of normal urine of low specific gravity, associated with intense thirst.

The etiology is obscure—brain injuries, emotional disturbances, syphilis, acute infectious disease and heredity have all been assigned as causes.

Its main symptom is of course polyuria (without sugar) and the con-

stant thirst, also a marked dryness of the mouth and of the skin; the patient is frequently irritable and peevish.

The prognosis of diabetes depends upon the type of the disease, its progress, the age of the patient and upon the response of the patient to dietary regulations by the physician.

Diabetes mellitus as such is said never to get well, it can, however, be controlled and life be prolonged by suitable diet and the resort to proper remedies. The younger the patient, the graver the prognosis. Patients contracting diabetes during the 5th and 6th decade can live their natural life by observance of proper dietary restrictions and medication.

Diabetes insipidus offers a favorable prognosis as far as the patient's life is concerned unless it depends upon a serious nervous lesion and then the unfavorable prognosis is the result of the lesion and not because of the polyuria.

The treatment is mainly based upon suitable dietary regimen and regulation of metabolic functions.

Little attention has been paid to the buccal symptoms of diabetes in the past and though gingivitis is very frequently an early and prominent symptom of this disease, which symptom is maintained throughout the whole course of the disease, most works on General Medicine do not mention it. Many dentists absolutely ignore the relationship between systemic disease and gingivitis to their patients' and their own detriment. The following case will illustrate this.

Several years ago the author was asked to see a patient who was suffering from a marked gingivitis in the region of the upper anterior teeth. The gums were puffy, hemorrhagic, swollen and very tender to touch. The patient had consulted his dentist who had scaled and cleaned his teeth, prescribed an astringent mouthwash and employed iodine locally. In the course of two weeks there was no improvement, and the writer was called in. In taking the patient's history the fact was brought out, that he drank a great deal of water as he was suffering from a constant thirst. A urinalysis showed the presence of a glycosuria.

The writer referred the patient to his physician who diagnosed the case as diabetes. Treatment was begun at once and in two weeks the patient reported perfect mouth comfort. The only buccal treatment which had been prescribed was a mouthwash containing Beta naphthol.

In this instance the correct interpretation of mouth symptoms not only promptly relieved the buccal disturbances but brought the patient medical aid for his systemic disease the presence of which he was not aware of.

The oral and dental symptoms are a gingivitis, which may be a mere ulitis or a well developed pyorrhœa with free discharge of pus, destruction of the alveolar structure and loosening of teeth.

Owing to their luxation the teeth (incisors particularly) offer little resistance to masticatory stress and gradually become dislocated outward, assuming a horizontal position, spreading out like a fan, so that the interproximate spaces become very much enlarged.

The saliva frequently is acid and contains sugar (though not always) both (acidity and the presence of glucose) favoring the spreading of dental caries.

In presenting the foregoing the writer desires to emphasize the importance of careful observation of the patient by the dentist and the necessity of being on the alert for buccal symptoms of systemic disease.

Tooth and mouth lesions may be local disease *per se*, but also local symptoms of general disturbances. Diabetes produces a general debility causing a lowered vitality of the buccal structures. Buccal conditions in diabetes frequently favor bacterial invasion and the dentist when treating gingivitis and loose teeth should be on the lookout for—Increased thirst and appetite, loss of weight, polynuria, and glycosuria (ascertained by urinalysis) as his patient may be a diabetic, whose only objective symptom is pyorrhea and whose objective signs he is not aware of.

150 EAST SEVENTY-FOURTH ST.

NO IMPLIED CONTRACT BETWEEN DENTIST AND PARENT

(*New York*) In the case of Sullivan v. Liggins recently tried in the New York Supreme Court, it was decided that a parent could not be held for the value of professional services on the theory of an implied contract for necessaries, where, unauthorized by him, his child went to a strange dentist, by whom no member of the family had previously been treated, and had his teeth filled on the representation that his father would pay. The action was brought originally in the Municipal Court of the borough of Brooklyn where judgment was entered for plaintiff Sullivan, the dentist. The Supreme Court reversed the holding of the Municipal Court and the following opinion was rendered by Justice Kopper. "There may be circumstances where services or commodities of which a child stands in immediate need render the previous assent of the parents unreasonable or inexpedient to seek. In such a case the person procuring the supply is the agent of the parent ex necessitate. Ketchem v. Marsland, 18 Misc. Rep., 452, 42 N. Y. Supp., 7. That cannot be said of this case, where the suit is by a dentist to recover on a bill for $85 for dental work in filling the teeth of the defendant's eighteen year old son without the knowledge or consent of the parent. For a bill of such character the assent of the parent cannot be implied, particularly when the dentist

never before performed work for the parent, or any member of his family, and where the parent was not shown to have had any knowledge of the performance of the services until after their completion. Where an infant goes to a strange dentist, by whom no member of his family has ever been treated before, and has dental work performed upon a representation that his father will pay, the dentist should first ascertain whether or not the father has authorized the work to be done, and if he fails to do so he cannot hold the father liable upon the theory of implied contract for necessaries.

Judgment reversed, with costs of this appeal, and complaint dismissed. Kelly and Blackmar, JJ., concur. (Sullivan v. Liggins, 149 N. Y. S., 517).

IOWA VASECTOMY LAW HELD INVALID

(*Federal*) At the session of 1913, the Iowa General Assembly passed an act providing for the operation of vasectomy on idiots and certain other classes of persons, including criminals who have been twice convicted of crime, for the purpose of preventing procreation. The case of Davis v. Berry, involves the validity of the statute as applied to the latter class. Complainant sought to enjoin the state board of parole and prison physician from performing the operation on himself, alleging that the law was invalid as imposing cruel and unusual punishment and as not providing due process of law. There is no provision for public hearing on the question of former conviction, and the first notice a convict may have of the private determination of the board of parole is the order subjecting him to the operation. This is held not sufficient to satisfy the constitutional mandate as to due process of law. The court goes into the history of similar punishments, and states that, while the operation may not be as painful as castration, the question of cruelty does not depend on physical discomfort alone, but also on the shame and humiliation attendant on loss of virile powers and inability to enter rightly into the marriage relation, and as thus viewed it is considered cruel. Reference is made to the case of State of Washington v. Fellen, 70 Wash., 65, 126 *Pacific Reporter*, 75, in which a somewhat similar Washington statute was held not to provide cruel punishment for one convicted of statutory rape. (Davis v. Berry, 216 Fed., 418).

CREDIT LISTS

(*Pennsylvania*) In an action against a dentist for libel, the charge being that he had caused plaintiff's name to be placed on the confidential printed list prepared by a credit association of which he was a member, and containing names of patients who had the reputation of being slow in paying their bills, did not entitle plaintiff to recover, where it appeared

that the list was in code form and unintelligible to others than members of the association and where there was no regulation of the association that services should be refused to those whose names appeared on the list. In order that a recovery may be had in a case of this kind it is absolutely essential that malice be an element present at the time of making the listing. (McDonald v. Lee, 92 A., 135.)

NEGLIGENCE ON PART OF MEDICAL MAN

(*Minnesota*) A medical man, or a person assuming to act as such, will be held guilty of "culpable negligence," within the meaning of the Minnesota statute defining manslaughter in the second degree as homicide committed without design to effect death, "by any act, procurement, or culpable negligence" not constituting a higher crime, where he has exhibited gross incompetency or inattention or wanton indifference to his patient's safety. (State v. Lester, 149 N. W., 29).

INSURANCE

(*New York*) A policy of insurance against the loss of dental supplies from theft, etc., is to be liberally construed in favor of the assured. (Duschenes v. National Surety Co. of N. Y. 79 Misc. Rep., 232).

PAYMENT FOR SERVICES

(*Missouri*) A promise of a mother to pay for services of a dentist or physician to her adult daughter, living in her family, cannot be implied from the fact that she paid for his previous services to the daughter with her own check; the payment being made at the daughter's request and being charged against her inheritance.

A promise of another to pay for services of a dentist or physician to an adult daughter, cannot be implied from the fact of the daughter living in her family, and she calling the physician or acquiescing therein and being present when he called. (Crowell v. Donoho, 168 Mo., 305).

SURGICAL RELIEF

(*Minnesota*) The Minnesota laws governing the poor do not require that medical and surgical relief furnished by a county to a destitute and disabled person shall be furnished by the county physician in order to hold the city liable therefore but may be furnished by any physician, surgeon, or dentist employed by the county officers. (Redwood County v. City of Minneapolis, 148 N. W., 469).

BERMUDA

By Heman Anderson, D.D. S., Perth Amboy, N. J.

The American people have justly earned the name of being the greatest travellers in the world. With war occupying the attention of the greater part of Europe, travelling abroad will be tiresome, expensive and very dangerous.

This will compel the travelling Americans to stay nearer home and many will "See America First" not necessarily for patriotic reasons but rather because they will have the choice of doing this or staying at home. Many Americans will in this way discover that the United States has more real beauty than can be found in all Europe.

The International Panama-Pacific Exposition at San Francisco will draw many across the continent and many en route will stop and see our wonderful western cities—view the marvellous Petrified Forest; The Grand Canyon in Arizona, the Garden of the Gods; ascend Pikes Peak; see the Yosemite Valley; Mt. Rainier National Park; take a wonderful coaching trip through our magnificent Yellowstone Park; go through the Canadian Rockies and enjoy the many coast resorts of Southern California with its wonderful old Spanish Missions, beautiful flowers and foliage.

Bearing all this in mind there still looms up in my mind a place that in many respects has no equal in the United States, Europe or the Orient, and it is a fine spot in which to spend a week, or several months.

The "Garden Spot of the Earth" is Bermuda and it is only a 45 hours' sail from New York and as the steamship companies advertise "Forty-Five Hours from Frost to Flowers"—the more you visit Bermuda the greater become its charms. The longer you stay, the longer you want to stay. The poorest speaker waxes eloquent when he talks "Bermuda."

Brother Bill has taught us that we can't burn the candle at both ends and still retain our health. Bermuda makes an ideal spot for spring, summer, fall, or winter vacations.

The wonderful colored sea, which in deep places is sapphire blue, in shoal places brown and purple patches and nearer shore the colors will be pale blue and green. The white coral houses sit in a background of green palms and other beautiful foliage, with no roar of trains, no trolley gongs, no automobiles to dodge, are the homes of easy going people who never hurry. All this, in fact everything here seems to soothe the tired nerves and you will soon forget you ever had nerves and could not sleep, for here you will sleep like a baby.

This wonderful group of islands has never seen snow nor felt frost and has no tropical heat and no rainy season. While we are shovelling snow

they are picking roses. Beautiful flowers and a magnificent foliage the year round, and being surrounded by the Atlantic Ocean it is never without its cooling zephyrs.

I am a Bermuda enthusiast for where else can you find such flowers, such foliage and all without the heat of the tropics?

What other place is an ideal summer resort and a still more famous winter resort? What other place is warmed by the Gulf Stream in winter and cooled by the breezes of the Atlantic Ocean in summer?

The temperature in winter seldom falls below 60 degrees or above 80 degrees in summer. One may enjoy Bermuda to its fullest extent in January or August, April or October, in fact any month in the year. At Easter time one may see the Easter lily growing in fields, much the same as a corn field at home. Acres and acres of them in fields cultivated to send the bulbs to the United States and elsewhere at Easter time. Along the road you will find miles and miles of oleanders growing wild and from 10 to 30 ft. high. Bermuda is worthy of its name "The Land of the Lily and the Rose."

Rubber plants that we have in pots at home and feel so proud of, grow into mammoth trees there. In the yard of a retired Bermuda dentist, is an immense rubber tree growing near the road and this enormous rubber tree has branches that extend over the roadway and all traffic passes under it. One of these branches is as thick as a man's body and at least 40 feet long.

The group of islands is but 17 miles long and about a mile wide and still one can spend a few days there and enjoy it nor spend a month or more and still not have exhausted the beauty of the island or care to leave it. There seems to be no place in the world where so much real beauty exists in so limited a space.

Much credit is due the people of Bermuda for keeping it so natural. On this island we find neither railroad, trolley nor automobile, not even a motorcycle is allowed. Real natural beauty is here to be enjoyed. Everything is old fashioned and quaint and there is plenty to see and varied enough to interest everybody, even people with a "grouch" enjoy Bermuda.

The island has 100 miles of superb stone roads, bicycle riding is very popular and wheels can be rented by the day or week at very reasonable rates. Bicycling is both a pleasant and healthful exercise, and for a dentist who has been closely confined for several months it is better and cheaper than a "Spring tonic".

Bermuda is less than 700 miles from New York and is about 400 miles directly east from South Carolina and is situated in midocean. When we look for it in the geography map, we find a mere speck with nothing near it for hundreds of miles.

The captain of our steamer said, "Every Bermudian ought to be a good sailor, for living on the island is like being on a boat anchored in mid-ocean." The air is sure to be pure (full of real ozone) and also the rain as there is no factory smoke nor dense settlement to contaminate it.

Many writers have tried to describe this wonderful island, but none have succeeded better than Mark Twain who was an annual visitor for many years. He was a poor sailor and didn't enjoy the ocean trip necessary to take to get to the island and he describes the voyage as "a trip through Hell to get to Heaven."

Bermuda was also the place selected by President Woodrow Wilson to spend his vacation after being elected President and prior to taking the office. Most of this vacation he spent in walking and bicycle riding. All sorts of other outdoor amusements are popular here, such as bathing the year round, boating of all descriptions, tennis, cricket and golf.

Bermuda is an English colony, therefore English is spoken and English money used. The principal products of the island are onions, potatoes, parsley, beets, and carrots. The Bermuda onion is famous, with their potato a close second.

The biggest income is from tourists and as most of them come from the United States our money is accepted at all hotels and stores.

Now as to dentistry, I found the men and women, all in good standing. No advertisers and everybody strictly ethical and high class. One of the lady dentists enjoys a very high class and exclusive practice. I was also glad to find them all friends of "Brother Bill" and several remarked that they had been helped to get better fees by his wonderful, helpful articles.

The dentists are all natives of Bermuda, mostly graduates of the leading dental colleges of the United States. They have a good dental examining board and thus get only efficient men.

THE TRUE LENT

Is this a fast—to keep
The larder lean
And clean
From fat of beeves and sheep?

Is it to quit the dish
Of flesh, yet still
To fill
The platter high with fish?

Is it to fast an hour
Or ragged go
Or show
A downcast look or sour?

No! 'Tis a fast to dole
The sheaf of wheat
And meat
Unto the hungry soul.

It is to fast from strife,
From old debate
And hate—
To circumcise thy life;

To show a heart grief-rent
To starve thy sin—
Not bin;
And that's to keep thy Lent.

—*Robert Herrick.* (1647).

HOW DENTAL EDUCATION OF THE PUBLIC PROCEEDS

It may be that the educational value of certain articles in popular papers is great, but such an article as the following does harm rather than good. If good dental articles, written in popular style were available, perhaps less of this kind of literature might appear.—EDITOR.

DO DENTISTS PULL MORE TEETH THAN THERE'S ANY NEED OF?*

BY LEONARD KEENE HIRSHBERG, A.M., M.A., M.D. (Johns Hopkins.)

Thirty years ago, before the discoveries of Pasteur, Koch and Lister that decay, fermentation, ulceration, abscesses, diseases, sores, blood poisoning, boils, erysipelas and decomposition are all caused by tiny, little living microscopic plants and animalculæ, it was the custom to have one's teeth pulled out at almost the slightest sign of the black spot of decay.

To-day, a generation later, teeth are still pulled out joyfully by many dentists. True enough, a few teeth are nowadays conservatively filled. But, for the most part, the merry murder of your feelings and the racking of your jaw bones still goes blithely onward. Even the use of local anæsthetics assuages not the after sensation of an aching void and a yawning chasm in the gums.

Medical methods have progressed—organs are transplanted, even bones are sewed together as neatly as a woman's skirt; yet the science of dentistry has moved as slowly as a tortoise. The thirty years which have passed since the discovery of bacteria as the cause of decay, have left little impression upon it. Not only are there comparatively few dentists who are personally aseptic themselves or who sterilize their instruments, but, like barbers, they practise the same errors now which they perpetrated in the seventies.

Dr. Wren H. Oliver, of London, and his colleague, Dr. H. A. Barker, protest in an emphatic manner against the all too-prevalent practice of pulling teeth and replacing them with false ones. They say that among some of the older dentists and a large portion of the public there appears to be an impression that nothing can be done either to prevent diseases of the teeth or to cure them when they have been once incurred.

As a result of over thirty years' experience it is their opinion that it is no less criminal to extract a tooth because it is in an ulcerated or broken down condition than it would be to remove an eye to get rid of a cataract.

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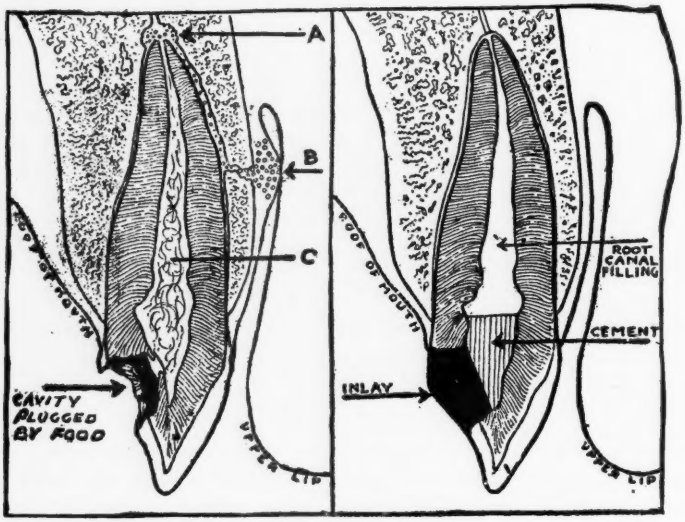
*The article with the cuts, has been reproduced from *The Chicago Examiner*, Sunday, Nov. 8, 1914. The correspondence which follows will speak for itself.

Yet you are continually hearing of poor unfortunates who have submitted to the extraction of all their teeth to be cured of gum disease.

Dr. Oliver has been protesting for years against the malpractices of quack dentists, and has viewed with horror the wrecked mouths of the poor deluded people who have been induced to part with all their teeth to make way for wretched substitutes. It is deplorable, he says, that nothing can be done to suppress these pests of society.

There can be no doubt, says Dr. Barker, that the wholesale extraction of teeth has become almost a craze.



HOW A BADLY DISEASED TOOTH CAN BE SAVED.

The diagram on the left shows a tooth so badly diseased that many dentists would at once pull it. An abscess (A) has formed as a result of gases and pus from decayed matter, which is unable to escape from the root canal (C), because the cavity is plugged. The discharge from this abscess has produced an ulcer or gumboil (B) on the jaw. On the right is shown the same tooth after receiving proper scientific treatment. The infection has been removed, the root canal filled and the cavity plugged with cement and an inlay of gold, which makes the tooth good for years of service.

PHYSICIANS DENOUNCE THE WHOLESALE EXTRACTION OF TEETH WHOSE DISEASES MIGHT OFTEN BE CURED

Not long ago a lieutenant of the Royal Navy Reserve went to him in despair about a lameness of his knees which had refused to yield to treatment at the hands of several distinguished surgeons. At last, the surgeons supposed the real cause had been found in inflammation of the lining of the teeth. Several teeth, sound and unsound, were accordingly taken out. But the knee, instead of getting better, grew worse.

On careful examination Dr. Barker found that the patient had a badly dislocated cartilage. He had the man anæsthetized, replaced the cartilage, and he rapidly recovered. But he is now minus several teeth which he ought never to have lost.

Dr. Oliver even goes so far as to maintain that with the new knowledge of asepsis, antisepsis, disinfection and local as well as the internal use of citrate of soda with hexa-methyl enetetramine—a drug which breaks up into formaldehyde inside the human tissues—it should seldom be necessary to extract teeth from a person whose general health is good.

The Tooth Key, which in the old days often broke the jaw in pulling a tooth. Dentists nowadays have more efficient and less cruel instruments, but physicians charge that they use them more than is really necessary.

This teeth pulling fetich has become a superstition—a tradition handed down from long before the time of the Pharaohs, say Drs. Barker and Oliver. Dentists, like barbers, never get away from the things told them by their masters. Those masters, as journeymen dentists, received the errors in perpetuity from their masters in turn.

The facts that have come to dentists in recent years, like those which are available for barbers, are too often utterly ignored. Teeth are jerked out at the slightest provocation, when, according to these London professors, ninety-nine per cent. of them, if treated the same as a skin ulcer or a boil, could be saved to their possessors.

Dr. L. K. Hirshberg,
Baltimore, Md.

November 21st, 1914.
New York City.

DEAR DOCTOR:

My attention has to-day been called to an article torn from a Chicago Sunday paper, entitled "Do Dentists Pull More Teeth Than There's Any Need Of?" I judge, from reading the article, that you have taken most of your data from conditions as they exist in countries where the practice of extracting teeth is very much more common than here, and where a very much smaller percentage of people can be interested in preservation of the natural teeth by filling cavities and treating abscess conditions.

To one, however, who is not somewhat familiar with conditions abroad, and who

would naturally apply your article to conditions in America, I may say that the article does an injustice to American dentists, since by far the greatest percentage of American dentists prefer to save teeth which are at all susceptible of being saved, and many of these habitually perform quite remarkable operations to this end, thereby saving teeth which one would hardly think could have been preserved for further usefulness. To so great an extent has this practice of preservation gone, that the number of teeth extracted has been very greatly decreased, comparatively few plates are made, and many dentists do no extracting at all. I could instance to you large practices where not one tooth a week is extracted.

On the other hand, there are of course many people who cannot afford to have their teeth saved since the modern methods in dentistry cannot be applied for the benefit of very poor people, owing to the fact that they require the devotion of more time to save a single tooth, than would be required for half a dozen serious operations. Some time charts at hand show that in certain cases it has required from 4 to 14 hours to save single teeth. The dentist cannot do this unless he is remunerated, and poor people cannot afford to remunerate him.

It is, however, a fact that dental education is now spreading rapidly among the people and that the efforts of dentists to have patients preserve their teeth are more acceptable and effective.

I think that owing to the prominence which you have given this article, and its injustice, under the conditions, you should make some correction as to its application.

Yours respectfully,

GWC: HS GEORGE WOOD CLAPP.

Baltimore, Md., Nov. 23, 1914.

DEAR DR. CLAPP:—

As an instructor of dentists and a personal acquaintance with dental proceed are in some parts of the United States outside of New York. I think the article in question not at all radical or unfair. If you wish me to write you an article my rates are 2 cents a word.

Most sincerely yours,

LKH-MAD (Dictated) DR. L. K. HIRSHBERG.

November 28th, 1914.

Editor Chicago Sunday Examiner: New York City.

DEAR SIR:

My attention has been called to an article in the magazine section, under date November 8th, entitled "Do Dentists Pull More Teeth Than There's Any Need Of," by Dr. Hirshberg of Baltimore, Md.

Upon receipt of this article and perusal of it, I wrote Dr. Hirshberg as per the attached copy, to which he replies as follows:

"As an instructor of dentists and a personal acquaintance with dental proceed are in some parts of the United States outside of New York. I think the article in question not at all radical or unfair. If you wish me to write you an article my rates are two cents a word."

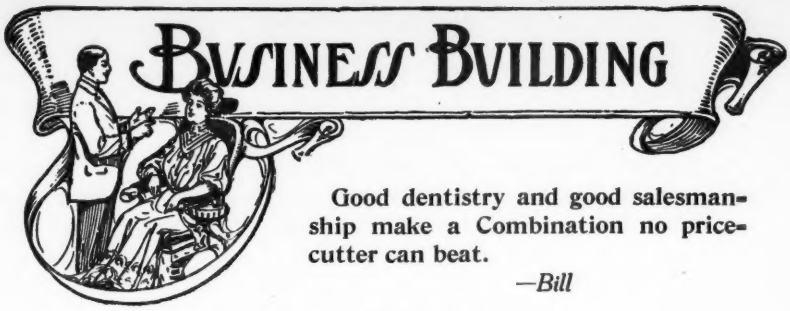
As editor of one of the leading American dental magazines, I wish to say that as applied to the average dental conditions in the United States, the article is both misleading and untrue. Dr. Hirshberg may know a great many things, but he knows very little about dental conditions.

It does not seem to me, that a paper with the prominence of yours should be the vehicle for articles prepared without sufficient knowledge.

Yours respectfully,

GWC: HS GEORGE WOOD CLAPP.

[Up to present date, Feb. 1, 1915 no reply has been made to this letter).



Good dentistry and good salesmanship make a Combination no price-cutter can beat.

—Bill

WHY I ADVERTISE

By An Advertising Dentist

The name of this contributor is withheld by me because an advertising dentist recently sent in an article, and I printed it, and now he spreads it on the page of a newspaper, saying frankly enough that he wrote it, and it was published in The Dental Digest. He may have the right to do that, but, somehow, I don't like it.

I have opened the pages of this magazine to this form of discussion, because if advertising is wrong, we cannot cure the wrong by dodging it and making believe we don't see it. And if it has something of right about it, we want to know it.

Don't think that because The Digest publishes these articles, the editor agrees with all that the writer says.—Editor.

I am an advertising dentist. I notice that the contributions on the subject in the Dental Digest are all written by non-advertising dentists.

I was graduated eleven years ago from a reputable college and when I left with the diploma in hand, I shared the ideals and aspirations possessed in common by most young graduates. A dentist of my acquaintance took me to a dental society meeting and I left it with a bad taste in my mouth. I went to another similar meeting a few months later and didn't like it so I stopped going.

It seemed to me that the organization was a mutaul admiration society where the members patted each other on the back and devoted to talks of ethics those parts of the evening that were not devoted to relating "How I do it." The subject of Ethics seemed in the mind of most of those present to be divided into two principal groups, namely, fees and advertising.

This subject of Ethics is principally discussed by persons who do not know if Ethics is singular or plural. The only unethical thing they do not do, even according to their own code, is not to advertise.

I practised "ethical" dentistry for six years when the close confinement palled on me and I quit a $6,500 practice for a fifteen dollar a week newspaper job. I became a reporter. At the end of three years, for a purely domestic reason, I decided that the work did not offer enough

nourishment and I cast about for a way of going back to my profession which was at least certain of giving me a decent living.

Right here let me define Ethics, Right and Wrong.

A philosopher, Spencer I think, said that all differences of opinion when closely analyzed, are found to be merely differences in the definition of terms. By defining several terms we may find that we were quarreling with some one for doing something of which he was entirely innocent.

Generally speaking Ethics takes in a man's moral duty not only to those individuals with whom he may be brought into contact, but also to the body politic of which he constitutes a part.

No act by itself is either good or bad, right or wrong, moral or immoral. It is the results of an act by which we must measure the act itself. Even the taking of human life is under certain circumstances regarded as right.

If this definition is the correct one, advertising by itself does not constitute a wrong. It is the result that makes it wrong or right. While modern business and modern advertising has evolved to the point where the man who advertises realizes that the only advertising that pays is that which tells the truth, medical and dental advertising has not yet reached that point; for this, the "ethical" dentist is largely responsible.

The "ethical" dentist has talked so much in his societies of the advertising quack, while he himself does everything but advertise, that he has made a pariah, an outcast of the one who does advertise to such an extent, that by the very force of circumstances, the advertiser does what he is accused of doing. You know, a person is generally what we think him, I am speaking of the average man not the exception, and, dentists and physicians are pretty average.

I went into a typical advertising office for a short time to see if I was still a good enough dentist to make a living. I became manager of that place earning an average of about $65 per week.

My knowledge of newspaper work and advertising taught me that the kind this dentist was doing was not only unethical, that is untruthful, but was bad business. When I spoke to the owner of the place I could not make him see it, so I branched out for myself. I took a half interest in an office owned by an "ethical" dentist, who had a private practice on the opposite side of the street, with the understanding that I was to have sole charge of the office and advertise and otherwise run it as I saw fit. In a short time we disagreed and I now own the office myself.

My conception of ethics included not only the relationship I bore to my colleagues but my duty to my patients. This I bore in mind all the time, as unfortunately the average dentist who sends in those effusions to the dental magazine does not, as I will show.

You will not find a thing among these ads which a conscientious dentist can not tell a patient at the chair. The only thing I do which the ethical dentist does not do is to guarantee my work. I work for people who might be generally termed of the lower middle class. They cannot afford to have work done over every year or two. A well constructed plate, bridge or filling should last ten years. I send my prosthetic work to a dental laboratory which turns out beautiful work. If any work I do in the mouth does not last ten years it is because of something I omitted to do or something I did that I should not have done and I regard it as perfectly ethical that I should suffer the consequences.

Now what is the matter with that? I am keeping in touch with the advances made in the profession through the dental journals. I sterilize

INVEST IN HEALTH

A commission in Cleveland, Ohio, said in its report that good teeth increased mental efficiency on the part of school children 50 to 100 per cent. over those who had bad teeth.

Tests made at Yale showed that students who masticated, "Fletcherized," their food thoroughly, had much greater powers of endurance than those who did not.

Increase the mental power of your children and your own physical power by investing in good modern dentistry NOW.

We examine teeth free."

(Name)
(Office)
(Office Hours)

A TEN YEAR WRITTEN GUARANTEE WITH ALL WORK

WHEN YOU LOSE ONE TOOTH YOU LOSE TWO

Do you know that when two of your teeth are missing you actually lose the use of four teeth?

A missing tooth in the lower jaw destroys the usefulness of the corresponding tooth in the upper jaw and vice versa. This is a menace to health because thorough mastication, which is absolutely essential to good health, is impossible without a full set of good teeth.

Our experts can supply your missing teeth and make them look and feel natural.

(Name)
(Address)
(Office Hours)

A TEN YEAR WRITTEN GUARANTEE WITH ALL WORK

WAITING

"I'll wait 'til it hurts," is an expression often used, in reference to having the teeth looked after.

Do you wait until your house burns before getting it insured?

When your child is ill do you wait until it dies before calling a doctor?

Do you wait until January freezing weather before buying an overcoat?

Don't 'wait until it hurts.'"

(Name)
(Address)
(Office Hours)

A TEN YEAR WRITTEN GUARANTEE WITH ALL WORK

Last Saturday a young man came in to have his teeth examined. He complained about the discoloration of the upper and lower teeth on the left side of his mouth.

Discoloration was due entirely to one defective tooth —a tooth that was later filled in a few minutes.

His teeth were discolored because on account of the defective tooth he ate entirely on the other side. The left side did not have the cleaning benefit of mastication and the formation of tartar caused them to become discolored. We filled the young man's defective tooth and removed the tartar for a small charge.

We'll do as much for you.

(Name)
(Address)
(Office Hours)

A TEN YEAR WRITTEN GUARANTEE WITH ALL WORK

all my instruments and I do something very few ethical dentists do, I sterilize my impression trays. I have been in many offices and I have yet to see this done.

Both in my ads and by word of mouth I always tell the patient the truth as I see it. The only thing I am ashamed of is a sign outside that was there before I came to the place and it is coming off very soon.

Is all this ethical or is it not?

Now as to the results to myself. In the first year I did $7,000. I have retained my own and my patients' good will and respect. At the end of ten years I shall not have accumulated a splendid collection of unpaid bills as I did in my private practice. I shall then have a visible

asset that my widow can run as well as I. I shall be able to take a vacation without being forced to come back and begin all over again.

It is true that the world will wear a path to the door of the man who can make a better clock, preach a better sermon or fill a tooth better than his neighbor even though he live in the wilderness. But I cannot fill a tooth better than any one else and I do not say so in my ads. If I had my office in the wilderness and hid it with foliage and trees instead of advertising, the chances are that my relatives would wear a path to my grave bearing flowers.

I have in front of me the effusion signed "A. H.. New Jersey" in the December DIGEST, evidently an ethical dentist. I look in vain for a word of what the dentist owes to the patients. He talks only of what the dentist owes to the other dentists. If this is not sublimated selfishness and diametrically opposed to real ethics may I go to that purgatory set aside for the real quacks.

Advertising that tells the truth is ethical. Advertising that does not tell the truth is not ethical. As I said at the outset I do not expect you to print this. I offered to talk before one dental society on "Why I Advertise" and the offer was not accepted. That society would listen to a talk on ethics from a man who would not know the difference between a real advertising office and a hole in the ground, but not from me, no sir! I am a quack.

I really and truly have a way of stopping fraudulent advertising. If you want to know what it is ask me and I'll give it gratis. Meanwhile be careful how you follow my example. You may take me too literally like the fellow who wanted to write. This chap felt that he could set the world on fire with the literature that was within him and he asked the advice of a publisher, an old friend of his father's. This man told the youngster that the first thing to do in modern fiction was make the first paragraph so striking that it would immediately grip the attention of his hearers. Six months later the publisher received a story from the young fellow in which he demonstrated how literally he had followed his advice. The story began as follows:

"Oh, Hell," 'said the duchess, who up to this time, had not taken part in the conversation.'

In business be as able as you can, but do not be cunning; cunning is the dark sanctuary of incapacity.

—*Lord Chesterfield's Letters.*

THE BUSINESS SIDE OF MEDICINE

A MODERN FEE BILL

Evidently the excuse that the physicians are no more businesslike than ourselves is not to serve us much longer as justification for not attending to the business side of our practices. Read what follows.

Compare the time required to spray a throat, at a minimum fee of $1.00, with the time required to make an examination of the teeth—usually for nothing. It takes about 5 minutes to mechanically determine the blood pressure, and consumes no apparatus. The fee is from $2.00 to $5.00. It takes about 15 minutes to examine the blood and requires very little apparatus. The fee is from $2.00 to $10.00. Note also the fees for administering general anesthetics.

This note is not a criticism of these fees. They mean a living and a competence for the physicians.—EDITOR.

DEAR DOCTOR TAYLOR:—I take pleasure in sending you a copy of the fee bill of the Medical Society of the County of Herkimer, N. Y.

Herkimer, N. Y. G. GRAVES, M. D.

The following is the fee table:

FEE BILL

Medical Society of the County of Herkimer, N. Y.

Adopted June 2, 1914.

VILLAGE OR CITY

For ordinary house visit:	
Day	$1.50 to $3.00
Night (10 p. m. to 8 a. m.)	3.00 to 5.00
For ordinary visit, contagious case in quarantine	2.00 to 10.00
For ordinary detention at house for over 1 hour, per hour or part thereof	3.00 to 5.00
For consultation visit, each physician	5.00 to 25.00
For consultation visit, daily repeated, each physician	3.00 to 10.00
For professional services rendered to more than one patient at the same visit, per patient	1.00 to 5.00
Regular fees for each visit repeated more than once daily	1.50 to 3.00

COUNTRY

For visits (outside village limits), one mile or a part thereof	2.00 to 4.00
For visits more than one mile or part thereof, per mile in both directions (Regular fee added.)	1.00 to 2.00
For night visit (9 p. m. to 8 a. m.)	4.00 to 8.00

Fees for services rendered in the country districts will be increased by unfavorable condition of the highways.

OFFICE FEES

Ordinary office visit or prescription	$.75 to $1.50
General examination	1.00 to 10.00
Examination of eye, ear, nose, throat, larynx, or local treatments thereof	1.00 to 5.00
Examination of heart, lungs	1.00 to 5.00
Examination of rectum, or local treatment thereof	2.00 to 5.00
Vaginal examination—manual or with speculum, or local treatment thereof	2.00 to 5.00
Examination of stomach, gastric lavage, or treatment thereof	2.00 to 5.00
Urethral catheterization, passing of sounds, or local treatment thereof	1.00 to 10.00
Irrigation of urethra or bladder	2.00 to 10.00
Retaining fee in gonorrhea	10.00 to 25.00
Retaining fee in syphilis	25.00 to 50.00
X-Ray examination or treatment	3.00 to 25.00
Electrical examination or treatment	3.00 to 25.00
Examination of urine—chemical	1.00 to 3.00
Complete (chemical and microscopical)	2.00 to 10.00
Examination of blood	2.00 to 10.00
Examination of sputum, feces or other discharges	2.00 to 10.00
Determination of blood pressure (mechanical)	2.00 to 5.00
For dressing ordinary wound (first dressing)	2.00 to 10.00
(Subsequent dressings according to time, material, and skill required.)	
Medicines, if furnished, according to cost.	

SURGICAL FEES

Incision of abscess	5.00 to 25.00
Abdomen: Laparotomy; cutting into abdominal cavity for diagnosis or treatment of organs therein	100.00 to 250.00
Abortion: Treatment or curettement for any purpose	25.00 to 75.00
Amputation of:	
Finger or toe	$10.00 to $25.00
Entire hand, forearm or foot	25.00 to 50.00
Leg or arm	50.00 to 100.00
Thigh	75.00 to 150.00
Other amputations	10.00 to 100.00
Anesthesia:	
Administration of anesthetics for surgical operation	10.00 to 25.00
For dental operation	5.00 to 10.00
For examination	5.00 to 10.00

Operation for aneurysm: Ligation of artery	$50.00 to $150.00
Operation for appendicitis	100.00 to 250.00
Bone: Injuries to or disease of, removal of diseased portion of bone	25.00 to 100.00
Breast: Amputation of breast	50.00 to 150.00
Removal of cancer of lip	25.00 to 50.00
Excision of carbuncle	10.00 to 25.00
Chest: Cutting into thoracic cavity for diagnosis of treatment of organs therein	50.00 to 150.00
Operation of circumcision	10.00 to 25.00
Dislocations: Reduction of	
Fingers or toes	5.00 to 15.00
Thumb	10.00 to 25.00
Wrist or lower jaw	15.00 to 25.00
Shoulder, elbow or ankle	25.00 to 40.00
Knee	35.00 to 75.00
Hip	50.00 to 100.00
Other dislocations	10.00 to 50.00
Operation on eyes	10.00 to 25.00
Operation on nose	10.00 to 25.00
Operation on throat	10.00 to 25.00
Removal of adenoids	15.00 to 25.00
Removal of tonsils	25.00 to 50.00
Operations on ear	10.00 to 50.00
Incision of ear drum	10.00 to 25.00
Removal of eye	50.00 to 100.00
Excision: Removal of	
Finger or toe	10.00 to 25.00
Elbow, wrist or ankle joint	50.00 to 100.00
Knee joint	75.00 to 150.00
Shoulder or hip joint	100.00 to 250.00
Fractures: Reduction of	
Nose, lower jaw, shoulder blade	25.00 to 50.00
Collar bone	35.00 to 75.00
Breast bone or rib	10.00 to 25.00
Upper arm	35.00 to 50.00
Forearm (one bone)	25.00 to 50.00
(Both bones)	35.00 to 70.00
Wrist	25.00 to 50.00
Hand	15.00 to 25.00
Fingers	5.00 to 10.00
Bones of pelvis (except coccyx)	75.00 to 150.00
Coccyx	10.00 to 25.00
Thigh	75.00 to 150.00
Knee cap (without cutting operation)	50.00 to 75.00
With cutting operation	100.00 to 150.00
Leg	50.00 to 100.00
Bones of foot	15.00 to 25.00
Toes	10.00 to 20.00
Other fractures	10.00 to 25.00

Open treatment of fractures, plaiting, wiring, etc	$100.00 to $250.00
Treatment for permanent cure of goiter	75.00 to 150.00
Treatment of gunshot wounds, not necessitating amputation or cutting into of abdominal, thoracic or cranial cavities	15.00 to 50.00
Treatment:	
Incision of sac of hydrocele	25.00 to 50.00
Incision into joint	25.00 to 50.00
Operation for relief of intestinal obstruction	100.00 to 500.00
Operations on kidney	100.00 to 250.00
Lockjaw:	
Injection of antitoxin into skull	100.00 to 150.00
Injection of antitoxin into spinal canal	50.00 to 100.00
Operation for mastoiditis	50.00 to 150.00
Nerve: Cutting operations for suture or stretching	25.00 to 50.00
Rectum: Cutting operation for hemorrhoids	
External	15.00 to 25.00
Internal	25.00 to 50.00
Prolapsed	25.00 to 50.00
Fistula-in-ano	25.00 to 50.00
Malignant stricture	100.00 to 250.00
Skull: Operation for opening cranial cavity, for treatment of fracture, hemorrhage or diagnosis or treatment of organs therein	100.00 to 250.00
Spine or spinal cord: Operation for removal of fractured vertebræ	100.00 to 250.00
External operation for relief or cure of stricture of esophagus	100.00 to 150.00
Operation for removal of stone in bladder, by cutting or crushing operation	75.00 to 150.00
Tapping:	
Abdomen	25.00 to 50.00
Bladder	15.00 to 25.00
Chest	15.00 to 25.00
Ear-drum	10.00 to 20.00
Hydrocele	10.00 to 20.00
Joints	10.00 to 20.00
Trachea: Operation for removal of foreign bodies, or for relief of difficult breathing	35.00 to 75.00
Operations for removal of tumors—malignant	50.00 to 150.00
Benign	25.00 to 75.00
Operation for permanent cure of varicocele	25.00 to 50.00
Operation for permanent cure of varicose veins	25.00 to 50.00

Suturing ordinary wounds	$5.00 to $10.00
Assistants at operations	10.00 to 25.00
Phlebotomy or intravenous infusion	25.00 to 50.00
Lumbar puncture for diagnosis or treatment	25.00 to 50.00

OBSTETRICAL FEES

Ordinary labor case, 1 to 5 hours' duration	15.00 to 50.00
For time required over 5 hours, per hour.	3.00 to 5.00
Instrumental delivery	25.00 to 100.00
Cases complicated by placenta previa, postpartum or puerperal hemorrhage, eclampsia, embryotomy, or version	25.00 to 150.00
Operation of Cæsarean section	100.00 to 500.00
Multiple pregnancy	25.00 to 100.00
Anesthesia, if required, extra	5.00 to 10.00
For services—birth completed before arrival of physician	5.00 to 10.00
Repair of recent lacerations of perineum	10.00 to 50.00
For intra-uterin douche or packing.	5.00 to 10.00
Premature birth—3 to 7 months	10.00 to 25.00
After visits, as required, regular fee	1.50 to 3.00
For retaining fee, to be collected of strangers or any person without legal responsibility for collection	10.00 to 25.00

MISCELLANEOUS FEES

Examination and consultation in lunacy case	10.00 to 50.00
Examination of dead body:	
External—viewing dead body	5.00 to 10.00
Internal—Autopsy ordered by coroner or requested by friends, for determination of cause of death	25.00 to 100.00
For evidence before coroner to determine the cause of death	5.00 to 10.00
For evidence and certifying cause of death	5.00 to 10.00
For making certificate of proof of death	2.00 to 5.00
Detention at investigation as witness, per day	25.00 to 50.00
Detention at court as witness, per day	25.00 to 50.00
For testifying as expert	25.00 to 500.00
For attendance at court and failure to examine for private or official purposes	5.00 to 10.00
For mileage to and from patient (both directions, per mile)	1.00 to 2.00
For time spent in interest of patient, per hour	3.00 to 5.00
(Expenses incurred in behalf of patient will be charged to patient.)	

For advice by telephone (same as office visit)	.75 to 1.50
Vaccination	1.00 to 3.00
Administration of antitoxin	2.00 to 25.00
Intravenous administration of medicines	25.00 to 50.00
Pasteur treatment of hydrophobia	50.00 to 150.00

For all work not enumerated above, proportionate fees will be charged.

TERMS AND INFORMATION

All terms are cash at the time of the service rendered, unless otherwise arranged.

All bills are due and payable when services are completed.

Statements of accounts will be rendered monthly. Prompt settlement is expected. Interest will be charged on all unpaid accounts of six months' duration. After one year unsettled accounts will be listed as undesirable with the county society. Patients listed as undesirable and strangers will be requested to pay in advance.

There will be no gift visits made by members of the society in obstetrical or surgical cases. Fees for visits in after treatment of obstetrical or surgical cases will be at the regular rates.

Fees for surgical dressings or treatments will be rendered according to the time and skill required.

The physician can make any reduction of fees deemed proper, in the form of a gift, to the worthy poor.

All office work cash unless otherwise arranged for.—The Medical World.

SUGGESTIVE THERAPEUTICS

Editor DENTAL DIGEST:

I was cementing a bridge on for a lady and I was using the saliva ejector to help keep the mouth dry. When I got through the lady said "Doctor, what kind of gas did you give me?" pointing to the saliva ejector.

"Gas! That was only to draw the saliva out of your mouth and keep it dry." He replied.

"I thought it was some kind of gas, it made my teeth tingle so."

Yours truly,

MAURICE HURWITZ,

Roxbury, Mass.

COÖPERATION

By W. I. MacFarlane, D.D.S., Tomahawk, Wis.

Here is a big and important subject, on which to set your ethics at work—our treatment of our fellow practitioners. If you aren't treating them as you want them to treat you, don't worry yourself about the ethics of financial discussions. Tackle the job of either speaking charitably or keeping silent when asked about a piece of work. Perhaps your work wasn't as perfect 2 or 5 or 10 years ago as it always is now, and it may need charity from some other dentist. It is certain that we shall all need charity at the hands of the dentists of the future.—*Editor.*

The incident which gave me the inspiration for these few lines occurred only a short time ago and in itself was of no great consequence.

I happened to be doing some work for a patient who was visiting in our city and during a pause in the operation she informed me that a certain tooth, which I had noticed but upon which I had passed no remark, had at one time given her a great deal of trouble and pain. She said it was all because Dr. X, was so careless about his work. "Why," she continued, "when I went to Dr. Y, for relief he was furiously angry and said that Dr. X, was a very poor excuse for a dentist if he would allow such a job as that to leave his office."

Now, I do not question the right of Dr. Y to feel that due care had not been exercised in the performance of the operation, but I do say that he had no right to pass judgment upon the other man's work, unless he had been present at the time of the operation and was fully aware of all the circumstances which might have a direct bearing upon the operation.

It is very easy for some one to look at a certain piece of work and criticise it either in his mind or to his patient, but the fact is, that perhaps if the one who questions the ability of the previous operator, were to work under the same environment he might feel very happy indeed, were he to secure even as good a result.

Charity is a great virtue and I think that not very many people, dentists or otherwise, pass through this life without realizing it at some time or other.

Suppose for instance that you have been operating for an extremely nervous person and that you have had to use all the selfcontrol you possessed to keep in even a half steady frame of mind, and that you finally succeeded in completing an operation which you know is not perfect and yet which will make that package of human angleworms comfortable for quite a while. Then perhaps this person goes to another dentist for some other trouble and he takes it upon himself to inform this patient that Dr. X. has certainly made a bad mess of this job, to say the least.

You all know it frequently happens that a patient has a story to tell, covering just such an instance and then they end with this question, "Doctor, what do you think about it?"

Now I say that our duty to the other fellow is this:—Give him the benefit of the doubt. Answer as you would wish him to answer, were he the judge, tell the patient that you are not in a position to pass judgment upon this case as you did not see it during the acute stage of inflammation or during the time that the operation was being performed.

A short time ago, I had occasion to work for a patient whose home was a long distance from the city. In opening into the canals of a tooth which had been treated previously, I discovered quite an amount of cotton. As I was trying to get it off the broach, my patient, who is very observing, asked to look at what she thought was the nerve, as she called it, but of course discovered that it was cotton and not pulp tissue. She at once jumped to the conclusion that she had paid for a gold brick instead of a root filling and was inclined to feel somewhat peeved. Now I do not use cotton for permanent root fillings, and it seems that this brother had that idea in mind, but I did not tell the patient this; I simply told her that perhaps at the time the tooth was treated and filled, this dentist could not use the materials that he was in the habit of using most of the time, on account of inflammation at the end of the roots. She was satisfied and I am sure that my explanation did not injure my brother dentist and yet I did not refill the canals with cotton.

At present I am working for a patient who is, to use the expression of a friend of mine, "The tail end of the limit." She is here on a visit, her home being in the West. When I examined her mouth I found five teeth in a putrescent condition, each one with a gutta percha plug in it. She was inclined to criticise the dentist who placed these fillings but I informed her that I was not in a position to judge what the condition was at the time.

Coöperation as I understand it, means to act jointly, to agree to work together to produce the same effect. Now if we could come to a mutual understanding, and each one do his part toward discouraging patients who wish to find fault with previous operators, I think the whole profession would be greatly benefited. We all know that taken separately, not one here is able to please every patient who has occasion to call upon him during the course of a year. That much is taken for granted. But as a whole, we are able to satisfy people very well if we will only coöperate. If each man will be honest when these occasions come up and show the other fellow a little charity, he will be benefited as well as the other man. How are we to know whether we can please this patient? Perhaps we also will not reach up to the expectations this person may have, and in

all probability a few months hence, some other fellow may be called upon to pass judgment upon our work.

I know of a case in which, as we might say, the chickens came home to roost. This dentist had fallen into the habit of criticising, very freely, operations other than those he considered his own. In this case the patient, who is a cousin of mine, had called on a previous occasion, several years before and submitted to an operation for the placing of a filling. The incident evidently had passed out of our professional friend's mind. Upon looking over the work already completed in this mouth, he took occasion to criticise by making the following remark to his patient. "The filling you have in that tooth is certainly a rotten piece of work. Where was it done?" Of course my cousin felt a little upset but he answered: "Why Doctor, you did that yourself."

Well to make the story short, the dentist tried to prove by his records that he did not do the work but found out that he did. Let us hope, that the lesson proved of some value to him. Be that as it may, it simply proved that had he been somewhat charitable, he might have been saved a great deal of embarrassment.

Sometimes we need not criticise others with words; a great many times it is possible to convey a very great deal by an expression. We need not always give an opinion in so many words. There are times when an act may convey more criticism than words, such as a shrug, a superior smile, etc.

Now I do not wish to go on record as advocating protection to unscrupulous operators, but what I do wish to advocate is this:—Always be perfectly honest in your own mind, when you are inclined to judge some other man's work and remember that the condition under which he operated might have made it impossible for him to do the thing that seems indicated at the period when the case comes to you. We all have a perfect right to make our prospective patient feel that we are competent to handle this particular case but we have no right to knock the methods of the other man or to injure his practice. Wherever there is a reasonable doubt give him the benefit.

This brings to my mind a few lines taken from "The Other Self". "If others think differently from what we do, they are no more different from us than we are from them. If they have no right to differ from us, then we are equally at fault when differing from them. No one can change his thought at a moment's notice. One may not at any particular moment think exactly what he would wish, but must think along lines indicated by his state of development and existing environment."

"When we realize that each one of us is, and ever must remain, an individual, and that it is inherently impossible for any two of us to be

exactly alike, it will be borne in upon us that others must be right, in thinking or doing exactly what their nature impels them to think or do. We shall come to see also that we may be free only to the extent that we accord freedom to others. We shall cease to judge others, for we shall understand that we can not fully conclude that if *we were placed in the exact position and state of development of any other person, we should do exactly what that person does.*"

If this is true, we will have to acknowledge that our only logical course when meeting conditions in which others seem to us to be wrong, is to practise tact and endeavor to educate them along the lines that we feel convinced would be best for them to follow, and not attempt to force our ideas upon them without previous preparations.

Most of you will remember that about two years ago, I was somewhat active in advocating a fee sheet. In fact I received a generous number of replies from the members of this society in response to my request for information and data. With the help of a committee, the sheet was prepared and presented to the society. Its reception was not all that I might have wished, but the thing that I wished for most was accomplished, namely, a great deal of interest was aroused which proved of considerable educational value. I was not and am not discouraged because the society did not adopt it. I think that it was a wise move when one of our members (who by his tact, saved it from the ash heap) made a motion that the society adopt it as a guide and not as a regular sheet.

I can see why some felt that it would not be practical. However, I still maintain that coöperation along this line is beneficial to the profession as a whole, but the foundation for the whole question must be laid in an educational campaign along the lines of the cost of production and maintenance. We will never be able to decide upon an adequate fee until we are thoroughly educated along the lines which relate to the costs of conducting our practice. When we have studied this phase of the situation we will be in a position to coöperate intelligently along every other line. I realize that it is not practical to have a list of iron-clad fees but I think it entirely feasible to have a minimum fee list based upon the cost of production of the services we render our patients, the data of this cost to be secured from each member of the society and the result used as a basis from which we can work intelligently in regard to securing fees which will be just to our patients, our families and ourselves.

And now in closing, I would like very much to ask a question. What is the purpose of a dental society? It seems to me that if it does not furnish the means of coöperation it is a failure. We join a society in order to gain the help of our fellow practitioners, to secure new ideas in regard to technic, to discuss questions which may confront us every day

in our practice, to profit through the experience of others, in short we expect to receive material benefit through the assistance of others.

But I contend that when a man joins a society and receives these benefits he plates himself under an obligation to return some thing in like manner to the society so that the burden may be more evenly distributed. In short he is under a moral obligation to coöperate with the others and give his ideas and experience to the society, no matter whether he values them or not. Even though they may seem unimportant to him, they may help someone else.

THE BUSINESS SIDE OF DENTISTRY*

By J. W. Halsell, D.D.S., Dallas, Tex.

I do not believe in subterfuge in arriving at a fee, but it is always well to have the patient realize that we are practising dentistry upon a high plane; that we have a definite ideal and a definite way of arriving at a fee.

Recently I was adjusting some form of porcelain crown on a tooth and the patient inquired what the crown cost me and I informed him of the nominal charge, and the patient was horrified to know that I was charging him $10 for the crown and was only paying such a nominal sum for the crown; and for that reason I never lose the opportunity of impressing upon patients the fact that I am only charging for my services and not selling any form of merchandise.

There are four factors entering into the arriving at a just fee—time, material, skill, and responsibility. If we know the time consumed in performing an operation or producing a finished piece of work, we can have a definite method of apportioning the overhead expense; if the time is known for the operation, the operator's fee can more intelligently be adjusted; unusual skill or great responsibility will, of course, increase the fee for the operator, but the great mass of services will be figured on time alone.

Try to regulate each branch of dentistry so that the fee obtained in one will not be necessary to meet the deficiency in another. Another thing to take into consideration in arriving at the character of work to be done for a patient is their ability to pay. In some classes of patients I feel that in justice to them we should make the fee as light as possible for them.

Why the necessity of inserting a gold inlay in some of the molars and

*Presented at Meeting of the Dallas Dental Society, December, 1914.

bicuspids for which we may obtain a fee of $8 or $10 when they are unable to conveniently pay the fee, and we can conveniently give them a good, serviceable amalgam filling which requires much less time and in the end will be most satisfactory to you and to the patient in knowing that you have assisted in meeting a bill that may be hard for such patient to meet; and in such way give you more time to devote to the one more favorably situated financially.

In all dental operations it all finally comes back to the time required. If a dentist has not time knowledge of his producing hours and the time used in each operation, he will sure have a hard time to find an explanation for some things that are hard to explain at the end of the year.

I have a card in my office in front of my chair which reads: "If your appointments cannot be kept please notify me at least three hours in advance to avoid being charged for reserved time"; some object, but I say why not? Time is my greatest asset.

The obtaining of a fee after you have earned it is one of the most essential parts. Never fail to send bill promptly, and at stated intervals, say monthly, always realizing that the most prompt pay is the most appreciative patient, and we must insist upon the meeting of the bills.

There are many things come up where the patient can't meet the accounts promptly, and in such cases I suggest that they keep me informed as to what I may expect, and under such conditions I do not bother about the collection, but I wish them to appreciate me in assisting them in meeting their accounts.

Try to be worthy of their appreciation in rendering the service and you will be in position to demand their appreciation in meeting the payments for such service.—*The Texas Dental Journal.*

THE DENTAL ROLL OF HONOR

Up to the present, the *British Dental Journal* has given the names of 172 Dental Surgeons and about 300 dental students and pupils serving in the Forces. Of the dental practitioners, 40 hold commissions in the R. A. M. C. and 65 are officers in other capacities. Of the students, 45 are serving in the R. A. M. C. and 46 are officers. In addition, up to the present, between twenty and thirty army dentists have been appointed with the temporary rank of lieutenant.—*Oral Health,* January, 1915.

PRACTICAL HINTS

[This department is in charge of Dr. V. C. Smedley, 604 California Bldg., Denver, Colo. To avoid unnecessary delay, Hints, Questions, and Answers should be sent direct to him.]*

ANOTHER POINTER ON THE BRIDGE SYSTEM IN CROWN WORK.—Use plaster instead of the carving compound. This eliminates the danger of melting the model while pouring the hot metal. The contour can be built out as well with plaster as with the carving compound.—WALDO J. ADAMS, D.D.S., EUGENE, OREGON.

TO PLACE A CEMENT FILLING.—When I place a cement filling I dip the plastic instrument in alcohol, shake off excess and proceed to place the filling, which overcomes the difficulty of having the cement cling to the instrument. Is this not better than using grease on the instrument, which becomes incorporated in the filling material to it's detriment?—EDWARD D. RALPH, D.D.S., JAMAICA, N. Y.

TO QUICKLY AND THOROUGHLY DISSOLVE GUM SANDRACH WITH ALCOHOL OR ETHER.—Put it into a bottle containing a quantity of pounded glass (fairly coarse pieces) and shake vigorously for a few minutes, let it stand a while, then shake again. When the gum sandrach is thoroughly dissolved filter off the varnish into a clean dry bottle. Dissolved with methylated spirits it makes an excellent varnish for separating models, (after shellac has been applied). Dissolved with ether it makes a varnish very well suited for covering synthetic fillings, instead of hot wax.—P. R. NEWLING, D.D.S., ADELAIDE, SOUTH AUSTRALIA.

A HELPFUL MAKESHIFT FOR TRIMMING AMALGAM FILLINGS.—To prepare, take an inch and a half or two inch piece of mechanical saw blade. Grind the back away so as to leave the blade pointed on the side the teeth are on. Put the other end in your broach holder and use to trim amalgam fillings at the gingival margins, so as to make room enough for the polishing strip. Be sure to grind the end so that the saw cuts, when pulled out after insertion between the teeth.—EDWARD T. BRUNSON, D.D.S., Ogden, Ia.

*In order to make this department as live, entertaining and helpful as possible, questions and answers, as well as hints of a practical nature, are solicited.

RADIOGRAPHS.—In checking up an operation with a radiograph the distortion present in the radiograph is easily detected when the measurement wire in the canal is placed alongside its shadow in the film.—E. S. BEST, D.D.S., MINNEAPOLIS.

TREATMENT OF ROOT CANALS WITH SODIUM DIOXIDE.—Sodium Dioxide (Na^2 O^2) is a very valuable agent in the treatment of root-canals, especially when putrescent material is present—but the technic of making a solution is usually too laborious as to details for the busy dentist. I have found that if the rubber dam is applied, the tooth opened up to give direct access to canals—and mouths of canals enlarged—and then some (boiled) water—a few drops from an abscess syringe—applied—the sodium dioxide (the pure powder) may be taken up on a moistened broach—either plain or barbed—and carried to the canals and worked into them. The solution is thus made right in the tooth. I have found no ill results—either to instruments or teeth—and the saving of time is great. By the use of Na^2 O^2 a foul, putrescent canal can be made sweet and clean in a few minutes. Of course, the technic governing putrescent canals must be followed to prevent putrescent material from being forced beyond apex.—ISADORE H. LAZARUS, D.M.D., Oak Bluffs, Mass.

THE USE OF COCAIN IN PULP EXTIRPATION AND TREATMENT OF SENSITIVE DENTIN.—In the use of cocain for pulp extirpation I find better results are often obtained by sealing in cocain under gutta percha or temporary cement, rather than using pressure with unvulcanized rubber. In cases of extreme inflammation the result can often be obtained with much less pain and discomfort to the patient if a pledget of cocain is carefully sealed in over exposure and filling allowed to set under slight pressure of a broad-ended instrument, and then left in place for about twenty minutes. My theory is that if a little time is given for drug to infiltrate through pulp tissue there is less chance of subsequent trouble in peri-apical region. Good results can be obtained in this way in treating sensitive cavities, but more pressure may be used in application.—A. G. SALISBURY, TAKAKA, NEW ZEALAND.

STERILIZATION OF ANESTHETIC INHALERS.—Particular caution should be exercised in the care of inhalers and breathing tube, that they are not a means of communicating infection from one patient to another. A few minutes' bath of the inhalers and tubing in a 1:5000 or 1:10,000 cyanid of mercury solution, followed by rinsing in water, and the use of the tubing with the inside wet, will prevent this contamination, and will insure a dust-and-germ free gas for the patient.—E. I. MCKESSON, *Ash's Monthly.*

CALCIUM LACTATE AS A SAFEGUARD AGAINST HEMORRHAGE.—It is not uncommon that cases present for extractions that give a previous history of severe and long-continued hemorrhage. One of the simplest and safest drugs for controlling this idiosyncrasy is calcium lactate. A dose of 5 grains three times a day, for several days before the operation, generally insures an absence of trouble in this direction. The drug can be obtained in tabloid form, and can be continued subsequent to the operation, if any doubt still exists as to the possibility of secondary hemorrhage.—E. S. FISCHER, *Australian Journal of Dentistry.*

THE USE OF NATURAL TEETH IN CROWN AND BRIDGE WORK*.—This clinic consisted of four practical demonstrations in the mouths of that many patients. One natural central and bicuspid, set by means of cast joint, having served a year and each seemed in perfect condition. One lower anterior four-tooth bridge, using the patient's own teeth, cementing them to a sanitary gold saddle, soldering this saddle to post lingual inlays in cuspids. A full upper and lower, using patient's own teeth, on gold plates. The teeth were cemented to posts vulcanized in the rubber. Colors are assumed in the mouth in from two to four weeks.—HARRY PARR, D.D.S., INDIANAPOLIS, IND.

CONCERNING INLAYS.—Inlays made for compound proximal cavities often fall short at the cervical margin especially if the pattern is taken by the direct method. When this happens the inlay can be set with a combination of synthetic and any of the other inlay cements, the synthetic being used to fill in the shortage at the cervical margin.—E. HARVEY RICHMOND, D.D.S., WINDSOR LOCKS, CONN.

[A better way to correct this defect I believe, is by the use of Alexander gold; this is a mat gold with wax incorporated. It can be warmed and stuck to the inlay where defective and when inlay is forced to seat in cavity will take the perfect outline of cavity wall as well as could be secured with inlay wax. Now cavity surface is filled with investment, wax burned out and solder, 20 or 22K plate flowed into the porous gold. It is also very possible where inlay is of pure gold to build it down with inlay wax, invest, burn out, bring flask to red heat and cast, fusing new gold perfectly onto old. It certainly seems to me better to either do one of the foregoing ways or make a new model altogether, as a chain is no stronger than its weakest link and surely the cervical margin is the most vulnerable part of any filling. At best a synthetic filling is certainly inferior to a perfect fitting gold inlay, except in esthetics; and to be in-

*Office clinic, Indiana State Dental Society, 1914.

serted as described the result must be inferior to that where it is placed in a cavity accessible to all the manipulation necessary for the best possible result.—V. C. S.]

PYORRHEA SPLINT.—I have a plain, simple retainer, which is sanitary and neat in every way. Take the cutting edges and grind them in same position as for facing. Take a fissure bur a little larger than the platinum pin which you use in this case, drill two holes in each tooth, one mesially, one distally. Then take pins from porcelain teeth, place one in each hole, letting the heads stick out; put on inlay wax; trim it all around. Make multiple sprue from wire, one point touching over each tooth. Heat, tack to inlay wax, chill and remove; then proceed to cast in the usual way.—A. REITZ, D.D.S., EVANSVILLE, IND., *The Dental Summary.*

QUESTIONS AND ANSWERS

Question.—How would you advise the use of Gilmore attachments in case of lower having the six anterior teeth and one third molar? Would you crown the molar and both cuspids? or would you simply cut them off to gum line and make plate and bars soldered to same.—G. I. W.

ANSWER.—You ask me what I would do with the case you describe, —your description is not definite or perhaps I should say inclusive enough for me to give you a decisive answer. My decision as to what I should consider best in this particular case would be governed by a consideration of the habit and disposition of the individual; the condition of the teeth and gums, the degree of soundness and of susceptibility to decay and to pyorrhea, as well as patient's ability and willingness to pay, in money and in appreciation. If teeth in question are inclined to be weak, I think without doubt they would render the best service by being excised and capped at the gum and connected by 14 guage clasp metal wire, paralleling the gum with about a 32nd of an inch space beneath, wire to engage two or more Gilmore clasps vulcanized into plate. If molar is very weak just fit smooth polished cap level with gum without any attachment whatever, it serving merely to afford support to plate in direct downward pressure, thus preventing to some extent, resorption of process. If all three teeth are sound and patient is of sufficiently cleanly habit to indicate that they may be kept so, as good service as any may be rendered by well fitted clasps with occlusal lug on molar and broad enough on lingual of cuspids to rest upon the cingulum, thus relieving gums and process from part of stress of mastication. In any case I should advise the lingual bar to relieve lingual surfaces of incisors and cervical gum margins from pressure and irritation.—V. C. S.

AN EPITOME OF CURRENT DENTAL AND MEDICAL LITERATURE

[*The Journal of the Allied Dental Societies*, December, 1914]

Dedication of the Forsyth Dental Infirmary for Children. By Matthew Carney, D.M.D., New York City.

A Study of the Physical Development of the Occlusal Curve. By Frank A. Delabarre, A.B., D.D.S., M.D., Boston.

A Further Study of the Effects of Acid Media on Natural Extracted Teeth. By Alfred P. Lothrop and William J. Gies, with the collaboration of Henry W. Gillett, Charles C. Linton, Arthur H. Merritt, and Herbert L. Wheeler.

Pyorrhea Alveolaris: Facts *Versus* Theory. By Percy R. Howe, A.B., D.D.S., Boston.

The Signs of the Times. By A. W. Thornton, D.D.S., L.D.S., D.D.Sc., Montreal.

President's Address. By Aurelius F. Wheeler, D.D.S., Worcester, Mass.

Chemistry of Oxyphosphates. By W. S. Medell, B. S.

A FURTHER STUDY OF THE EFFECTS OF ACID MEDIA ON NATURAL EXTRACTED TEETH

By Alfred P. Lothrop and Wm. J. Gies, with the collaboration of Henry W. Gillett, Charles C. Linton, Arthur H. Merritt, and Herbert L. Wheeler

Professor Gies, before beginning his investigations suggested (1) that dental caries might be due to the action of micro-organisms upon carbohydrates on and between the teeth, *localized* in both cases, by "adhesive mucin masses" or by other mechanical fixations. (2) That the disintegration of "adhesive mucin masses", or their prevention, might be an important feature of prophylactic treatment against dental caries. (3) That both disintegration and prevention might be accomplished satisfactorily with dilute acid and (4) that "food acids" (the typical fruit acids and their acid salts) might be effectively used for such purposes.

The special virtue of food acid media "to keep teeth clean" as against the supposed advantages of alkaline dentifrices is based upon (a) the chemically precipitative (curdling) effect of food-acid media on mucin solutions (thin, viscid, or semi-solid); (b) the comparative non-adhesiveness of mucin curds; (c) the ease with which mucin curds or flakes can be brushed from dental surfaces; (d) the destructive effect of the acid substances in such media on oral micro-organisms; and incidentally (e) the temporary though helpful *stimulating* effect of such acid media on the after-flow of saliva.

The universal dietary use of fruits and fruit juices emphasizes the utility of such media for the above purposes. And also silences the objection to the reasonable application of the same kinds of juices as frequently to the teeth with a brush.

In Professor Gies' experiments vinegar has been used most frequently because of the convenience and satisfaction with which it may be obtained

abundantly, conserved perfectly, and used accurately, and because, next to lemon juice, it appears to possess the highest acidity, and, assumedly, one of the most dangerous fruit acids.

"Our preliminary experiments on the effects, on natural extracted teeth, of diluted vinegar in particular, were undertaken to determine whether the reasonable use, as a dentrifice, of such a comparatively strong food acid medium (obviously highly effective as a cleansing agent), would produce any *deleterious* effects; and if so, of what nature and to what extent. Our results indicated that vinegar, diluted (1:1) with water and applied to teeth twice daily for six months, *did not* induce injurious effects.

Our experiments since this last year's report have given us *similar data for longer periods of time* and also for several additional acid agents of physiological importance.

The teeth referred to in these experiments were placed in an environment severer than that of the mouth, examined and filled by the dental collaborators with various filling materials and then subjected to the treatment with a dentifrice.

The teeth were brushed twice daily at about eight hour intervals, kept in a moist chamber at room temperature.

The results of the experiments are the following:—

1. The fermentation of *Glucose* on normal and filled teeth with sound enamel "worn very little or not at all," in the presence of saliva induced *rapid decalcification* of enamel and speedy disintegration of some of the fillings.

2. Two daily brushings with tap water and continuous daily treatment under muslin covers during intervals, with (a) tap water, (b) water containing carbon dioxide, (c) water holding an abundance of salivary mucin failed to induce injurious effects on teeth with sound enamel "worn through and exposing dentin" and with enamel "worn very little or not at all."

3. Two daily brushings for four months with tap water, and continuous daily treatment under muslin covers during the intervening periods with (a) 0.25 per cent. solution of mono-sodium, di-hydrogen phosphate ($NaH_2\ PO_4$) and with (b) aqueous suspension of salivary *mucin* plus (not mucinate) 0.25 per cent. solution of NaH_2PO_4 failed to produce injurious effects on either sound or worn enamel or fillings.

4. Two daily brushings in comparative tests for 8 months with (1) dilute vinegar (1:1), (2) common tooth powder, (3) common tooth paste, with intervening constant application of saliva were uninjured or any change detected as a result of vinegar treatment.

5. Two daily brushings with dilute vinegar (1:1) for 8 months, 9

months, 17 months, were free from injurious influence on both enamel and on most fillings.

[*Dental Cosmos*, February, 1915]

The Teeth of "Eoanthropus": the Piltdown Skull. By Arthur S. Underwood, L.D.S. M.B., B.S., L.R.C.P., M.R.C.S.

Tube Teeth and Porcelain Rods: Their Uses and Adaptations in Prosthetic Dentistry. (X.) By John Girdwood, D.D.S., L.D.S.

The Cement Lute in Inlay Work. By J. B. Parfitt, L. R.C.P., M.R.C.S., L.D.S.

The Pathology of the Dental Pulp. By Russell W. Bunting, D.D.Sc.

Radio-active Substances and Their Therapeutic Application in Dentistry. By Hermann Prinz, A.M., M.D., D.D.S.

Nitrous Oxid Analgesia in General Dental Practice. By E. B. Prentiss, D.D.S.

Anesthesia and Its Relation to Operative Dentistry. By W. D. DeLong, D.D.S.

Dental Education. By Alfred Owre, B.A., M.D., D.D.S.

Surgical Lesions Due to Oral Sepsis, and Their Treatment. By W. J. Roe, M.D., D.D.S.

The Normal Function of the Child Denture in Its Relation to Development of the Jaws and Other Facial Bones and the Preservation of the Teeth. By H. E. Kelsey, D.D.S.

The Technique and Relative Value of Gold Fillings and Inlays. By J. V. Conzett, D.D.S.

DENTAL EDUCATION

By Alfred Owre, B.A., M.D., D.D.S., Minneapolis, Minn.

"To prepare us for complete living is the function which education has to discharge."—*Spencer.*

The spirit and the purpose of the practical best that dental education can accomplish for those who come under the influence of a workable ideal educational system, are outlined by Dean Owre.

The beauty, clarity, and loftiness of his convictions, ideas and ideals are matched by the force, accuracy and simplicity of the diction he uses to express them.

It is so in harmony with the principles and purposes that are fundamentally sound in the guiding advancing ideals of a greater human and spiritual democracy that his message may be applied with equal force to the problems that beset us in every avenue of effort.

The present day "stagnation in dentistry" and the inefficiency of dental education are diagnosed, the sources of these discovered and constructive remedies are prescribed for this condition of affairs with a grasp of things as they are, in a rare epigrammatic style.

In conclusion, it seems to me that education, the greatest and noblest of all missions, cannot be entrusted to the industry for profit element. We must use our most united effort to have the state universities take over all dental education, but not on a niggardly basis. This is the first and most important step; this in itself will insure the balance, the development of the ideal dental teacher as pictured. Better methods of instruction, higher standards of entrance and fitness of students will soon come

thereafter. The state can, according to its interpretation of community welfare, adjust the length and intensity of the course, and insist upon ideals and standards to be legally maintained.

We must strive eventually for a more general realization of the fact that dentistry is a great boon to mankind, and that it is intimately connected with general happiness. Furthermore, we must increase the possibilities for the man who enters our ranks to find joyful expression in dentistry.

Let me conclude by saying optimistically, and with all the enthusiasm that I possess, that it is the rank and file we depend upon. No reform ever comes from above. Dr. Babylon is the self-satisfied and contented drag to real progress; he has directed the whole movement. We have been turned from the true path of our development by the insincere pursuit of what was foreign to our temper, but our great hope is that, by sincerely desiring it, we may be restored to that dignified and exalted position which it is our birthright to hold.

SURGICAL LESIONS DUE TO ORAL SEPSIS, AND THEIR TREATMENT

By W. J. Roe, M.D., D.D.S., Philadelphia, Pa.

This article reviews and rehearses the various septic conditions found in the mouth and describes in a thorough and practical way the lesions such conditions induce, and outlines a thorough and practical method for their surgical relief.

Particular attention is called to the contraindications for the extractions of lower third molars, and emphasizes the importance of avoiding traumatism and infection in the extraction of all teeth.

The treatment of maxillary sinusitis, excellently described, is in accord with the clinical experience of scientific oral surgeons.

ANESTHESIA AND ITS RELATION TO OPERATIVE DENTISTRY

By W. D. DeLong, D.D.S., Reading, Pa.

NITROUS OXID ANALGESIA IN GENERAL DENTAL PRACTICE

By E. B. Prentiss, D.D.S., New York City

In these two articles the advantages of painlessly operating on the sensitive teeth of our patients are contrasted with the responsibility assumed for their safety in the administration of nitrous oxid and oxygen. Both declare that adequate instruction and study under the guidance of experienced and qualified teachers are essential for success in the administration of the anesthetic and the safety of the patient.

Preceded by such study and training, it is advantageous and advis-

able, but not necessary, for the careful dentist to possess an apparatus for the administration of nitrous oxide and oxygen. It will prove a great help in many cases in which conductive anesthesia or other anesthetics are not indicated.

The consensus of opinion seems to be that a capable assistant should be at hand, if not actually needed, that ill-effects may be expected in about ten per cent. of the cases, and that the improved apparatus now on the market meets the requirements of most operators.

[*Items of Interest* February 1915]

Amœbæ in Pyorrheal Pockets. By C. Edmund Kells, D.D.S.

The Causes of Abnormalities—Heredity or Environment. By Chas. E. Woodruff, M.D., Lt.-Col. U. S. Army (Retired).

Restoration of the Normal Masticatory Function of Decayed Teeth. By A. H. Ketchum, D.D.S.

The Dental Hygienist in Public Institutions. By A. C. Fones, D.D.S.

The New Gospel of Health According to the Dentist. By Dr. Harold Clark.

THE CAUSES OF ABNORMALITIES—HEREDITY OR ENVIRONMENT

By Chas. E. Woodruff, M.D., Lt.-Col. U. S. Army (Retired)

With prospective and comprehension, the author places before the reader, in a style interesting and convincing, the facts and the theories that may be employed to account for dental and oral abnormalities. He states that "the lesson to be derived from this résumé of the present status of the effect of heredity and environment is this: Heredity means that an unchanged piece of germ plasm of a normal parent must develop as the parent did, and if it departs markedly from the predestined groove, something in the environment pushed it out. Arrested or perverted development of the jaws always has an environmental cause, generally prenatal, but it may be post-natal from bad nutrition or disease. Moreover, a good environment (including nutrition) may restore a baby to normality which seems drifting away from it. The cause may have happened in the grandparent, so profoundly affecting the germ cells as to interfere with their proper development unto a third or fourth generation by a pseudo-inheritance. Finally the tendency of all organisms is to return to the normal specific form if the environment is restored to the normal, the exceptions being those rare cases in which an entirely new germ plasm has been created by the environment.

We will find that abnormalities themselves are not transmissible, but that the germ plasm, being continuous, will repeat what has been done in prior generations, unless the environment changes it. We must cease to refer abnormalities to a mystical heredity and unpreventable result of the will of God, but consider them as material results of material causes which are largely avoidable. The subject is really one of preventive medicine.

[*The Dental Summary*, February, 1915.]

The Technic of Conductive Anesthesia. By Theodore Blum.
Repairing Broken Pin Facing in the Mouth. By E. P. Marcilliat.
The Interproximal Spaces. By E. P. Dameron.
Cancerous and Precancerous Lesions of the Mouth and Lips. By W. D. Gatch.
Impacted Supernumeraries. By H. T. Nichols.
Removable Bridge Work and Anchored Dentures. By Karl G. Knoche.
A New Idea for Making Gold Inlays. By F. R. Wilder.
General Considerations of Cavity Preparation. By Thos. P. Hinman.
A Permanent Root Canal Filling Without Gutta Percha Points. By H. L. Mead.
Ten Years With Ascher's Enamel. By C. E. Duck.
Up-to-Date Methods of Office Practice. By Thos. P. Hinman.
Up-to-Date Methods of Office Practice. By Gordon L. Burke.
Methods of an Up-to-Date Office Practice. By E. T. Barr.
Methods of Dental Office Practice. By I. H. Harrington.
Detailed Procedure in Pulp Canal Operations. By Elmer S. Best.
Report on Dental Hygiene and Oral Prophylaxis. By J. D. Locke.
Staining Artificial Teeth—Pressing Back Gum Tissue From Badly Broken-Down Teeth. By F. A. Hamilton.
Mounting Inlays. By George Bell.
Practical Suggestions. By L. W. Daily.

THE TECHNIC OF CONDUCTIVE ANESTHESIA

By Theodore Blum, D.D.S., M.D., (Penn.) N.Y.C. Universæ Medicinæ Doctor (Vienna)

With a wealth of detail and illustration the author sets forth the methods of securing conductive anesthesia.

The article gives a clear, exact and necessary description of the anatomy of the parts in which conductive anesthesia is used. He explains the technic employed from a wide experience, careful study, and long practice in this country and in Europe.

This article is so written that the reader may appreciate the value, efficiency and application of novocain and suprarenin anesthesia.

The most important requirements for successful local anesthesia, the author well declares, is a rigid and mandatory adherence to asepsis, a thorough understanding of the pathology and anatomy of the parts injected, and the acquisition and practice of a careful and exact technic.

The suggestions, warnings, and advice deserve careful consideration by those about to use or are using this indispensable anesthesia.

[*The International Journal of Orthodontia*, January, 1915]

Report of a Class II, Division 2 Case, Treated with Dr. Edward H. Angle's New Pin and Tube Regulating Appliance. By A. H. Ketcham, D.D.S.
Some Points of Common Interest to the Rhinologist and the Orthodontist. By Daniel M'Kenzie, M.D., F.R.C.S.
Orthodontia as Viewed by a General Practitioner. By Burton Lee Thorpe, M.D., D.D.S.
Report of Three Orthodontic Cases. By W. G. Barr, D.D.S., Wichita, Kansas.

SOME POINTS OF COMMON INTEREST TO THE RHINOLOGIST AND THE ORTHODONTIST

By Daniel M'Kenzie, M.D., F.R.C.S.

"The rhinologist recognizes that there are a few cases in which the removal of adenoids fails to cure the mouthbreathing habit;" because the larger number of these have malocclusion resulting from deformed palates.

The mechanism which produces narrowing of the palate is composed of (1) The facial muscles and cheek tissue, the tension of which on the alveolar process, hinders or prevents the broadening of the palate, and allows the premaxillary segment to push forward.

The narrow palate, the projecting upper incisors, represent the perpetuation and fixation in the bony skeleton of the facial attitude assumed by children who have nasal obstruction. After the faulty eruption of the teeth, this is not only fixed, but exaggerated and even caricatured. This is analogous to "The osseous malformations of the trunk and limbs" —"the result of adoption and maintenance of improper attitudes." Bone is everywhere plastic and everywhere responds to alterations of strain and stress. The normal balance of the force of gravity, the action of growth and the action of the muscles, induces a normally-shaped bone. Deformity ensues when one of these is weaker or stronger than the others.

(2) The preponderating influence of the tongue. The withdrawal of this expanding force from the palate, when the mouth is used for breathing, permits the jaws to remain narrow.

(3) The absence or deficiency of normal mastication, the writer contends, is the predominating factor in the cause of narrowing of the palate.

"The development of the maxillæ and palate is conditioned in response to pressure stimuli of strain and stress imparted to the bone by the teeth in the act of mastication."

The width of the jaws depends upon and is proportional to the amount of mastication.

Arbuthnot Lane has pointed out that pressure and strain produce changes in the form and function of joints, and even produce new joints, and the normal form of the skeleton depends upon a normal combination of attitudes of action with attitudes of rest and the preponderance of either one results in deformity.

The conclusion is reached that the chief,—if not the only cause of

normal shape of the jaws, is the alteration of normal mastication with periods of rest, and the reverse of this produces abnormal jaws.

There are two stages in the production of this condition,—(1) The insufficient mastication and habitual rest which leads to a narrow palate. (2) The eruption of the first permanent molar which perpetuates, intensifies and finally fixes the error in development.

The author contends that before the eighth year adenoids are practically the only cause of mouth breathing. The palate and nasal septum deformities do not exist so early as this.

And insufficient mastication in early life, from whatever cause arising, will induce contracted arches and high vaults.

The author also suggests the part impaired nasal breathing plays in retarding proper maxillary development.

One of the two greatest enemies in middle life is catarrh and conditions associated with it. And these catarrhal conditions are very much more prevalent in those with narrow arches than those with normal arches. And to these catarrhal conditions, narrow palates, and obstructed noses, may be traced many cases of bronchitis, asthma, emphysema, ethmoiditis and nasal polypus.

The author advises the correction of oral deformities between the eighth and fourteenth years, and the removal of adenoids before the eighth year.

[*The Dental Review*, February, 1915.]

An Interesting Record of Porcelain Operations. W. A. Capon.
The Restoration of Occlusal Surfaces of Molars and Bicuspids with Cast Gold Inlays. R. Ottolengui, D.D. S.
Deficiencies in Our Amalgam Technic, with Suggestions for Its Improvement. W. E. Harper, D.D. S.
Fixed Bridge Work. L. W. Strong, D.D. S.
Individual Crowns. R. E. MacBoyle, D.D. S.
President's Address. L. L. Davis, D.D. S.

FIXED BRIDGE WORK

By L. W. Strong, D.D.S., Chicago, Ill.

"A dental bridge is essentially a continuous masticating surface anchored to supporting abutments at two or more points of its length." Turner says that "by uniting or splinting together several teeth as in a bridge piece, the movement of each tooth is modified or restrained, and by such fixation two natural teeth are frequently found to successfully withstand more force than the sum of their individual resistance." There is a rule laid down along this line which says that there should never be more dummies in the bridge than there are abutments and piers, and this

seems to be a very safe and conservative statement to remember. The larger proportion of your successes will be among your small bridges, and the chances for failure increase in proportion to the increase in size.

Most extensive pieces of fixed bridge work would be more satisfactory to all concerned, if they were handled in some other manner. Substitutes or "dummies" should be, *as far as possible*, of porcelain, and of the interchangeable or replaceable kind.

Commenting on the length of time, as far back as 1728, that bridge work has been used and the vast amount of literature describing the numerous methods and processes of its mechanical, hygienic and esthetic construction, and the disastrous results of the improper construction and application of bridge work—the author declares, "it is to be deplored that so many have failed to inform themselves in regard to the underlying principles of crown and bridge work and the necessary requirements indicating its application.

I am frank to acknowledge that the "fixed bridge" is one of the many temptations lying in the pathway of the unsuspecting practitioner of dentistry, because of its beauty and naturalness.

Except in rare instances, the removal of all pulps and the proper filling of all root canals is advocated before the use of such teeth for abutments.

The very first step in considering a case for bridgework is the making of study models.

Teeth or roots to be used as abutments must be healthy, strong, and in normal position. For cleansing and strength, there must be sufficient room for the use of ample material.

"Do not place a fixed bridge in a mouth, no matter how favorable all other conditions may be, unless you are satisfied that the mouth will receive sufficient care and attention to protect *your* work and the patient's health. Fixed bridges must satisfy the hygienic, cosmetic and esthetic requirements of each case.

"The abutment is such an important part of a bridge, that every detail of the construction of individual crowns must be observed." They should be re-inforced to prevent stretching or fracture.

When used as an abutment, the width of the inlay (bucco lingually) should be made equal to or exceed, at some point on the occlusal surface, the bucco-lingual width of the dummy cusps and should have gingival margins well below the soft tissues, and other margins in self-cleansing areas, and should always have supplemental pin anchorage or its equivalent.

The "dummy cusps should never be made wide enough to form a shelf which cannot be brushed clean with the tooth brush." But the

embrasures and interproximal spaces in fixed bridges should be so broad that they may be cleaned with the tooth brush. "The point of union between abutments and dummies should be but little larger than a normal contact point. Careless construction at this point not only endangers the permanency of the abutment, but in some instances it threatens the health, happiness, and frequently the very existence of the individual."

"A small surface at this junction point can be obtained by the use of iridio-platinum wire for re-inforcement."

At the fiftieth anniversary celebration of the Illinois State Dental Society in the "Fixed Bridge Clinic" the work of twenty of the best crown and bridge men demonstrated the unanimous adoption of the idea of interchangeable or replaceable tooth or facing in the construction of fixed bridges.

[*The Journal of the American Medical Association*, Chicago, Ill., December 5, 1914.]

Acute Parenchymatous Glossitis. By Virgil Loeb, A.B., M.D., D.D.S., St. Louis.
A Study of the Bacteriology of Alveolar Abscess and Infected Root Canals. By Thomas L. Gilmer, M.D. and A. M Moody, Chicago.
Mouth Infection as a Source of Systemic Disease. By Frank Billings, M.D., Chicago.
Mouth Infection as a Source of Systemic Disease. By C. H. Mayo, M.D., Rochester, Minn.
Mouth Infection as a Source of Systemic Disease. By E. C. Rosenow, M.D., Chicago.
Peridental Infection as a Causative Factor in Nervous Diseases. By C. Burns Craig, M.D., New York City.

MOUTH INFECTION AS A SOURCE OF SYSTEMIC DISEASE

By C. H. Mayo, M.D., Rochester, Minn.

"Disease," the author defines, "is an inflammatory process from infection and the efforts at repair. It may also be chronic from the failure of cell life through lack of defense, from defective nutrition and advancing age."

And the "infections which produce the greatest number of diseases enter the system by way of respiratory and alimentary tracts."

The great importance of well known diseases of nasal passages with their sinuses, the lymphoid tissue of the pharynx and tonsils, and the diseases of gums and teeth is now more generally appreciated.

We have long looked on the acids of the stomach as destructive to the bacteria which the mouth harbors, but Smithies, in a microscopic examination of gastric extracts from 2,406 different individuals with "stomach complaint" (dyspepsia, indigestion, and the like) showed that irrespective of the degree of acidity, bacteria were present in 87 per cent.

"Morphologically cocci and diplococci were present in 83 per cent.;

short and long rods (often of the colon group) in 58 per cent.; typical streptococci and staphylococci in 17 per cent. and *Leptothrix buccalis* in 24 per cent."

"In fifty-four cultural studies of saliva from 'dyspeptic patients,' streptococci and staphylococci were demonstrated in over 80 per cent., bacilli in 66 per cent. and *Leptothrix buccalis* in more than 14 per cent." Apparently these common pus-producing organisms (streptococci and staphylococci) have their proliferation retarded in gastric juice, but the bacilli (often of the colon group) as well as *Leptothrix buccalis* thrive in the stomach. Bacteria pass through the mucous membrane of the small intestine into the blood stream. Bacteria, dead and alive, are so great in number in the large intestine as to constitute a considerable bulk of the dejecta. Bacteria in the blood occurs in all infectious diseases. According to their number and virulence, the blood responds in slight or extreme degree to the symptoms, general and local, constituting the disease.

Rosenow has shown that changes in environment may change the appearance and specific action of bacteria. These, in the bloodstream, selectively choose their location and develop specific local disease.

Pyorrhea, tonsilitis, sinusitis, root abcesses, and their pus-pockets may be the source of either acute or chronic rheumatism.

Rosenow has also shown that ulcerations of the stomach may be caused by bacteria which live in the blood and have a selective affinity for particular areas.

Enough is known concerning infections and their mode of entrance for the infected and diseased mouth and respiratory tract to be looked on as most serious menaces. Much may be done by more general and effective school inspection. "The present generation of children will understand and demand protection for their children in time." The first teeth should be watched, that the second be not permitted to erupt irregularly, causing deformities.

"The physicians engaged in this line of observation require fully as much training in the rudiments of dentistry as the dentist does in the signs of infectious diseases."—"The big stick which leads to our advancement is in the hands of the progressive and educated public who are constantly demanding more of their dentists, of the medical profession and of the state in protecting them against preventable diseases."

THOSE have a short Lent who owe money to be paid at Easter.—*Poor Richard.*

[*The Lancet*, London, December 19, 1914]

"OUR ARMY'S TEETH"

By F. Newland Pedley, F.R.C.S., Eng., L.D.S.

The British Military authorities are very anxious to do everything possible for the care of the teeth, and the writer suggests it may best be done by (1) the mobilization of "the dental surgeons, making the unregistered men and mechanics act as assistants to the dental surgeons. The teeth of the army even in the battlefield could then be repaired."

(2) Careful inspection and treatment of the teeth of every child from the time the first tooth is cut, making dental neglect a punishable offence.

In twenty-five years this would produce admirable results, with additional benefits by heredity.

Our needs in this war are immediate, he states, for we want as many men as we can get and they are no use without teeth.

Artificial teeth do not always yield good results and offer too great a chance to the malingerer. He may get rid of them, and then be sent home amongst the dental failures.

Some men with teeth below standard may be taken if a good corps of dental surgeons are sent prepared to do as much work as possible, in saving teeth as well as extracting them.

They should be organized, inspected, and work under their own officers. As extractions do not take long, all available time should be devoted to treating exposed pulps and filling carious teeth. This would, for the duration of the war, take care of a large number of men who would otherwise be lost.

When there are many wounded, it is a great advantage to have "gas," for when men are weak, they dread the dentist more than they fear a "Jack Johnson" when they are well. I applied for "gas" on these grounds, and it was sent to me at once.

[*British Medical Journal*, December 19, 1914]

PERMANGANATES IN SLOUGHING AND TETANUS—INFECTED WOUNDS

By Lieut.-Col. Sir Leonard Rogers, K.C.I.E., M.D., F.R.C.P., B.S., F.R.C.S., I.M.S.

Cancrum Oris.

"This is a common and very fatal complication of kala-azar, (a tropical disease caused by a protozoan parasite) and most difficult to control in those emaciated and exhausted subjects with greatly reduced number of phagocytes. For several years past I have treated the gangrenous condition with the very frequent washing with a dark purple solution of potassium permanganate (about 1 in 500) together with swabbing the

ulcerated surface with a one per cent. solution two to three times a day. In several cases this treatment has stopped the sloughing of the tissues, and complete healing has followed, while in more than one patient, recovery from kala-azar has ensued. A simple remedy which can control such a very septic condition as cancrum oris is worthy of trial in any form of sloughing wound."

The writer also suggests the efficiency of permanganate in the prevention of tetanus and other infections due to anærobic organisms.

[*Dominion Dental Journal*, January, 1915.]

The Color of the Teeth. F. H. Orton, D.D.S., St. Paul, Minn.

Scientific Treatment of the Dental Pulp and Pulp Canals. Fred E. Burden, D.D.S., Moncton, N. B.

Nitrous Oxide and Oxygen in Dentistry, Analgesia and Anaesthesia. Fred J. McMahon, L.D.S., D.D.S.

SCIENTIFIC TREATMENT OF THE DENTAL PULPS AND PULP CANALS

By Fred E. Burden, D.D.S., Moncton, N. B.

The Technique of Removing the Organic Remains of the Pulp and Contents of the Dental Tubules, by the Chemical Action on Them of Sodium of Potassium

Schriers Na+k a combination of the two alkaline metals, sodium and potassium, a bluish white paste with metallic lustre, and contained in capillary tubes.

To open the tubes, hold with a towel and mark lightly with a file slightly below the wax, and snap off the top of the tube. Seal again with wax after using.

Liberates hydrogen atom when it comes in contact with water, which produces heat and an explosion. It will cause burns, and injure any tissue with which it comes in contact.

Care should be used not to force too large quantities through apex, as it will cause pericementitis.

Do not point tube to patient's face or hold it near them when using.

Select a fine Kerr Broach and introduce it into tube of Na+k, withdraw, and sufficient paste will adhere. Now introduce the broach into the canal, and twist gently with the thumb and first finger of the right hand, keeping in mind the idea of getting to the full length of the canal without breaking the broach. As soon as possible use a large broach, then still larger until the required enlargement of the canal is obtained. (Kerr broaches come in assorted sizes).

Each time before introducing the broach into the canal, free it from debris, dry it by wiping upon a piece of sterile gauze or absorbent cotton,

then introduce it into the tube again for more Na+k paste. The Na+k causes a chemical reaction to take place when it comes in contact with the organic matter, setting free the hydrogen atom from the water, which is accompanied by heat and an explosion.

It is important, therefore, to use care in not allowing unnecessary moisture to exist, and to protect the patient's face and eyes with a towel. Never attempt treatment without rubber dam.

The remaining portion of the organic composition of the pulp together with the contents of the dental tubules, is converted by this chemical reaction into soap.

After using the Na+k until all action stops, and no pain or sensitiveness is felt by the patient when the Kerr broach is introduced to the full length of the canal, and after the canal has been amply enlarged; the next procedure is to free the canals, and contents of the tubules, of soap.

Dry with cotton and warm air, to remove any particles of Na+k that may remain and cause miniature explosions.

Wash the field with:

℞ Hydrogen peroxide, ℥ ii. (Marchands).
Hydragyri bichloridi, gr. $1\frac{3}{4}$

This makes about 1-500 per cent. solution.

This solution coagulates the albumins and carries off contents by gaseous expansion.

Dry out, and again flood the field by capillary attraction with same solution, until no further action takes place, and the solution is clear.

Now dry thoroughly, wash the tooth, pulp chamber, and rubber dam surrounding the field with absolute alcohol.

Technique of Canal Filling

(1) Flood with tincture of iodine (freshly prepared) as especially antiseptic and diffusible, to aid absorption in apical region.

There will be objection to this method on account of staining the tooth. But, with care, staining can be avoided. In fact, there is no excuse for it, when the operator recognizes the fact, and uses care; decolorizing the iodine remaining in the pulp chamber with alcohol.

(2) Dry with warm air blast.

(3) Flood canals with eucalyptol by capillary attraction.

Eucalyptol $C_{10}H_{18}O$ (Merck.) is a transparent colorless liquid with strong aromatic odor, obtained from the essential oil of eucalyptus. Reaction neutral, insoluble in water, and soluble in alcohol, non-irritating, detergent and solvent for gutta percha.

Is preferable to chloroform as a solvent for gutta percha, on account of its non-irritating property.

(4) Select suitable gutta percha points from glass container, where they are kept in 10 per cent. formaldehyd solution or weak alcohol solution, or better still, saline solution.

Grasp the large end of the point in a pair of sterile pliers (which have not been used previously in the operation). Dip point in eucalyptol then in iodoform, or aristol, which is practically the same but without the odor (the iodoform to aid granulation).

Carry this point, after being so prepared, as near the apical end of the canal as possible. It is sometimes necessary to use more than one point. In that case after the first point is in place, it is only necessary to dip the other points in eucalyptol as a solvent.

Play a stream of warm air on the end of the point or points, to soften; and with consolidated canal plugger No. 40, pack into canal thoroughly, cut off the surplus and seal with heat from an electric gutta percha instrument, then wipe off the sealed end with cotton, saturated with eucalyptol. Fill each canal separately and thoroughly.

In some cases, it will be found to be more satisfactory, to use parafine and bismuth trioxide, which is especially well tolerated by the apical tissues.

Filling the Pulp Chamber

Fill the pulp chamber with zinc oxychloride cement, as it sets free hydrochloric acid and zinc oxides, should moisture come in contact with it, which is good assurance against reinfection.

Abscessed Conditions

In abscessed conditions of the alveolis, the same technique is followed. After using Na+k treatment, force a suitable strength carbolic solution through the apex into the tissues to cauterize and aid granulation. This treatment can not be done until the pus is evacuated, of course, and the method of evacuating the pus rests with the surgeon and the case to be treated.

In cases where incision is to be made into the tissues, the cataract knife is the most useful, and its keen sensitive cutting surface is far superior to the clumsy and dangerous curved or straight bistoury.

If a man look sharply and attentively, he shall see Fortune; for though she is blind, she is not invisible.—BACON.

FUNDS FOR INJURED SOLDIERS

At the meeting of the American Institute of Dental Teachers held at Ann Arbor, Mich., on January 26th, it was decided to take steps that should result in the raising of a fund to be used through the Red Cross Society, in giving relief and aid to the soldiers in Europe who are suffering from oral and dental injuries. The President was instructed to appoint a committee to take charge of this matter. President F. W. Gethro, under this instruction, appointed the following Executive and General committees:

EXECUTIVE COMMITTEE

HENRY W. MORGAN — E. A. JOHNSON
ELLISON HILLYER — JOHN F. BIDDLE, Secretary
C. R. E. KOCH, Chairman

GENERAL COMMITTEE

E. C. KIRK, Philadelphia
J. H. KENNERLY, St. Louis
H. C. MILLER, Portland, Ore.
D. M. GAILLE, Chicago
JOHN F. BIDDLE, Pittsburgh
E. T. DARBY, Philadelphia
ALFRED OWRE, Minneapolis
B. HOLLY SMITH, Baltimore
E. A. JOHNSON, Boston
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D. M. CATTELL, Memphis
FREDERICK R. HENSHAW, Indianapolis
S. W. BOWLES, Washington
E. H. SMITH, Boston
A. H. HIPPLE, Omaha
ELLISON HILLYER, New York
TRUMAN W. BROPHY, Chicago
D. H. SQUIRE, Buffalo
H. E. FRIESELL, Pittsburgh
HENRY W. MORGAN, Nashville
I. N. BROOMELL, Philadelphia
WALLACE WOOD, New Orleans
FRANK T. BREENE, Iowa City
H. L. BANZHAF, Milwaukee
J. G. SHARP, San Francisco
G. V. BLACK, Chicago
W. T. CHAMBERS, Denver
H. M. SEAMANS, Columbus
J. D. PATTERSON, Kansas City
N. S. HOFF, Ann Arbor
C. N. JOHNSON, Chicago
H. L. WHEELER, New York
L. E. FORD, Los Angeles
C. R. E. KOCH, Chicago
H. B. TILESTON, Louisville

The Executive Committee is contemplating the issue of contribution certificate booklets. Each booklet will contain twenty (20) certificates or coupons certifying that the holder thereof has contributed 25 cents to this fund. This certificate will be neatly lithographed, something like national currency. It will be printed in lilac ink—the color of the dental profession—and bear upon its face the Red Geneva cross.

It is hoped that the dental schools, dental students and dental societies, as well as the profession at large, will become sufficiently interested in this propaganda to secure a large enough fund, through these small contributions, to secure real relief for the class of war sufferers for which it is designed. That it may aid in the establishment of several special hospitals or wards devoted to dental and oral surgery injuries, within the belligerent zone of Europe, is the ultimate purpose of this movement.

It is expected that these booklets will be ready for distribution on or before March 1st. Applications for them may be made to Dr. John F. Biddle, of Pittsburgh, Pa., Secretary of the Executive Committee; or to Dr. C. R. E. Koch, 31 West Lake St., Chicago, Chairman of the committee, before March 1st. After that date all the members of the Executive Committee and General Committee will be in a position to supply them.

SOCIETY NOTES

THE PANAMA PACIFIC DENTAL CONGRESS

AUGUST 30TH TO SEPTEMBER 9TH, 1915.

The Transportation Committee are recommending the following plan and schedule of railway rates from New York, Chicago and other points of the East to San Francisco and return.

Following the usual custom and in order that all those who desire to attend the Panama Pacific Dental Congress at San Francisco, August 30th to September 9th, 1915, may do so with the maximum of comfort and pleasure and minimum of fatigue and inconvenience, the Transportation Committees announce that arrangements have been made for special train service. The present plan is to have three special trains from Chicago leaving as follows:—

First train, leave Chicago on August 21st going via Burlington route to Kansas City and the Sante Fe. Stopovers will be made at Colorado Springs, Isleta Indian Village, the Grand Canyon, Redlands, Riverside, San Diego, Los Angeles and San Francisco.

Second train, leave Chicago on August 24th going via Burlington route to Denver, and Western Pacific to San Francisco. Train two includes stop-overs of one day in Colorado Springs and special attention has been given to the schedule so that our party will pass through the scenic points of interest in daylight.

Third train, leave Chicago on August 25th going via Burlington route to Denver, and Western Pacific to San Francisco as in route two. It will be noted that the two trains, that is, the train leaving Chicago on the 24th and 25th, will meet in Colorado Springs and proceed from there in one or two trains according to the number who will take this route. It will also be noted that all the trains have been arranged so as to arrive in San Francisco one day prior to the opening of our convention.

There is a possibility that the number from the East will be sufficiently large to warrant the running of a special train right through from New York in which case the eastern and Chicago, and in vicinity parties, will be consolidated and go as one train from Chicago. In the event that there is not a sufficient number to warrant the running of a special train from New York, special through sleepers will be provided and will run through from New York to San Francisco on all of the three schedules outlined.

For the advance information of those interested in the trip the Transportation Committees have endeavored to show briefly what the schedules of the trains will be. A circular

outlining the trip in detail will be prepared some time in the near future and will be distributed generally to members of the association.

To attend the Dental Congress and the Panama Exposition, it is understood that a reduction of fare is made for transportation to San Francisco from any point in United States and Canada.

There is no special train returning. It is therefore necessary to decide your return route when purchasing ticket on either of the following schedules.

Train Schedule I

Lv. Boston	2:00 P. M.	August 20th	Via Boston & Albany.
Lv. New York	5:00 P. M.	" "	" N. Y. Central Wolverine
Ar. Albany	8:15 P. M.	" "	"
	(connect with trains from Boston and other points in New England States)		
Ar. Schenectady	8:47 P. M.	August 20th	Via N. Y. Central Wolverine
Ar. Utica	10:23 P. M.	" "	"
Ar. Syracuse	11:40 P. M.	" "	"
Ar. Rochester	1:20 A. M.	" 21st	"
Ar. Buffalo	3:10 A. M. (eastern time)	" "	"
Ar. Detroit	7:10 A. M. (central time)	" "	"
Ar. Chicago	2:00 P. M. (central station)		

Those desiring a less expensive train to Chicago can leave Grand Central Terminal 2:00 P. M. August 20th due Chicago 5:00 P. M. August 21st. No extra fare is charged on this train.

Lv. Chicago	6:10 P. M.	August 21st	Via Chic. Burlington & Quincy
Ar. Kansas City	8:00 A. M.	" 22nd	
Lv. Kansas City	11:00 A. M.	" 22nd	" Atch. Topeka & Santa Fe.
Ar. Colorado Springs	6:30 A. M.	" 23rd	
Lv. Colorado Springs	8:30 P. M.	" 23rd	
Ar. Albuquerque	1:20 P. M.	" 24th	
Lv. Albuquerque	2:00 P. M.	" 24th	
Ar. Isleta	2:30 P. M.	" 24th	
Lv. Isleta	4:00 P. M.	" 24th	
Ar. Grand Canyon	5:00 A. M.	" 25th	
Lv. Grand Canyon	8:00 P. M.	" 25th	
Ar. Redlands	12:30 P. M.	" 26th	
Lv. Redlands	2:30 P. M.	" 26th	
Ar. Riverside	3:30 P. M.	" 26th	
Lv. Riverside	11:59 P. M.	" 26th	
Ar. San Diego	7:00 A. M.	" 27th	
Lv. San Diego	11:59 P. M.	" 27th	
Ar. Los Angeles	7:00 A. M.	" 28th	
Lv. Los Angeles	8:00 P. M.	" 28th	Via Southern Pacific
Ar. San Francisco	9:45 A. M.	" 29th	

Railway fare from New York to SanFrancisco via the above route and returning via any direct route (plus $7.50 for Canyon) $98.80
The Wolverine—Fast Express—New York to Chicago—Extra Charge 6.00
Railway fare from Chicago to San Francisco going via the above route and returning via any direct route 62.50
Lower berth from New York to Chicago 15.00
Lower berth—Chicago to San Diego (estimated) 18.50
Lower berth, San Diego to Los Angeles 1.50
Lower berth, Los Angeles to San Francisco 2.50
Side trip from Williams to Grand Canyon and return (extra) 7.50

There are many passenger trains from New York to Chicago.

The faster trains are more expensive. The fare on the slower trains is less. Either can be utilized in making connection with these schedules:

To attend the Dental Congress and the Panama Exposition, it is understood that a reduction of fare is made for transportation to San Francisco from any point in United States.

Train Schedule II

Lv. Chicago	11:00 P. M.	August 24th	Via C. B. & Q.
Ar. Denver	7:00 A. M.	" 26th	
Lv. Denver	8:00 A. M.	" 26th	" D. & R. G.
Ar. Colorado Springs . .	10:30 A. M.	" 26th	
Lv. Colorado Springs . .	10:30 A. M.	" 27th	
Ar. Salt Lake City . .	12:30 P. M.	" 28th	
Lv. Salt Lake City . .	1:00 P. M.	" 28th	" Western Pacific
Ar. San Francisco . . .	5:00 P. M.	" 29th	

Railroad fare from Chicago to San Francisco going via the above route and returning via any direct route $62.50
Returning via Portland, Oregon 80.00
Lower berth, Chicago to San Francisco (estimated) 15.00

Train Schedule III

Lv. Chicago	11:00 P. M.	August 25th	Via C. B. & Q.
Ar. Denver	7:00 A. M.	" 27th	
Lv. Denver	8:00 A. M.	" 27th	" D. &. R. G.
Lv. Colorado Springs . .	10:30 A. M.	" 27th	
Ar. Salt Lake City . .	12:30 P. M.	" 28th	
Lv. Salt Lake City . .	1:00 P. M.	" 28th	" Western Pacific
Ar. San Francisco . . .	5:00 P. M.	" 29th	

Rates will be the same as route II except that a standard lower berth from Chicago to San Francisco will be $13.00.

By the Northern Routes to San Francisco and return by a central or southern route, there is an added fee of $17.50.

Applications for space should be addressed to Mr. C. E. Colony, City Ticket Agent, B. & A. Road, Boston, Mass. or Mr. W. V. Lifsey, General Eastern Passenger Agt. N. Y. Central Lines—1216 Broadway, N. Y. C.

TRANSPORTATION COMMITTEE NATIONAL DENTAL ASSOCIATION

Dr. Victor H. Jackson, Chairman, N. Y.
Dr. H. F. Hoffman, Denver, Colo.
Dr. Jos. D. Eby, Atlanta, Ga.
Dr. D. C. Bacon, Chicago, Ill.
Dr. Henry W. Weirick, San Francisco,
Dr. J. P. Marshall, St. Louis, Mo.

TRANSPORTATION COMMITTEE PANAMA PACIFIC DENTAL CONGRESS

Dr. Henry W. Weirick, Chairman—San Francisco
Dr. Harry P. Evans, New York.
Dr. Alpheus R. Brown, Boston, Mass.
Dr. E. M. Carson, St. Louis, Mo.
Dr. F. W. Gethro, Chicago, Ill.
Dr. Jos. D. Eby, Atlanta, Ga.
Dr. Chas. F. Fiset, Seattle, Wash.
Dr. B. W. Berthel, St. Paul, Minn.

SOCIETY NOTES

EXAMINATION OF DENTISTS FOR THE UNITED STATES ARMY

The Surgeon General of the Army announces that examinations for the appointment of Acting Dental Surgeons will be held at Fort Slocum, New York; Columbus Barracks, Ohio; Jefferson Barracks, Missouri; Fort Logan, Colorado; and Fort McDowell, California, on Monday, April 12, 1915.

Application blanks and full information concerning these examinations can be procured by addressing the "Surgeon General, U. S. Army, Washington, D. C."

The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between 21 and 27 years of age, a graduate of a dental school legally authorized to confer the degree of D. D. S., and shall be of good moral character and habits.

Acting Dental Surgeons are employed under a three years' contract, at the rate of $150.00 per month. They are entitled to traveling allowances in obeying their first orders, in changing stations, and in returning to their homes at termination of service. They also have a privilege of purchasing certain supplies at the Army commissary. After three years' service, if found qualified, they are promoted to the grade of dental surgeon with the rank of first lieutenant, and receive thereafter the pay and allowances appertaining to that rank.

In order to perfect all necessary arrangements for the examination, applications must be in the possession of the Surgeon General at least two weeks before the date of examination.

YOU ARE INVITED

By the Second District Dental Society to attend the Best Dinner and the Best Meeting on Monday evening, April 18th. Reserve this evening for a meeting that will signal a marked advance in scientific dentistry. The dinner and meeting will be held in the new Hotel Bossert, Brooklyn.

Dinner Committee: A. M. Nodine, Chairman; F. C. Walker, and A. H. Hunter, 67 Hanson Place, Brooklyn.

FUTURE EVENTS

March 9, 1915.—Fox River Valley Dental Society, Oshkosh, Wis.—R. J. CHADY, *Secretary.*

March 15–19, 1915.—Oklahoma State Dental Society, Oklahoma City.—C. R. LAWRENCE, Enid, Okla., *Secretary.*

March 16–19, 1915.—Next semi-annual meeting of the Dental Manufacturers' Club, Copley-Plaza Hotel, Boston, Mass.—A. R. KELTIE, J. J. CRIMMINGS, S. H. REYNOLDS, *Local Committee of Arrangements.*

April 12–13, 1915.—Southern Minnesota District Dental Society, Annual Meeting, Mankato, Minn.—GEORGE W. NORRIS, Tracy, Minn., *Secretary.*

April 13, 1915.—Alabama Dental Association, Montgomery, Ala.—J. A. BLUE, Birmingham, Ala., *Secretary.*

April 13–14, 1915.—Odontological Society of Western Penna., Annual Spring Meeting, Pittsburgh, Pa., LESLIE WADDILL, *Chief Exhibit Committee;* KING S. PERRY, *Secretary.*

April 14–16, 1915.—Annual meeting of the West Virginia State Dental Society, Wheeling, W. Va.—J. W. PARSONS, Huntington, W. Va., *Secretary.*

April 15–16, 1915.—Michigan State Dental Society, annual meeting, Colisseum Annex, Grand Rapids, Mich.—E. J. CHAMBERLIN, Grand Rapids, *Secretary.*

April 20–22, 1915.—Connecticut State Dental Association, fifty-first anniversary, in Armory, Hartford,—CHAS. H. RIGGS, Hartford, Conn., *President;* E. R. BRYANT, New Haven, Conn., *Secretary.*

April 20–22, 1915.—Mississippi Dental Association, Jackson, Miss.—M. B. VARNADO, Osyka, Miss., *Secretary.*

April 27–29, 1915.—Kansas City Dental Association, Topeka.—A. L. BENTON, *Secretary.*

April 27–30, 1915.—South Carolina State Dental Association, Jefferson Hotel, Columbia.—E. C. DYE, Greenville, S. C., *Secretary.*

May 4–6, 1915.—Iowa State Dental Society, Waterloo, Ia.—C. M. KENNEDY, Des Moines, Ia., *Secretary.*

May 5–7, 1915.—Massachusetts Dental Society, Boston, Mass.—A. H. ST. C. CHASE, Everett, Mass., *Secretary.*

May 11–12, 1915.—Ontario Dental Society, College Bldg., Toronto, Ont.

May 11–14, 1915.—Illinois State Dental Society, Peoria, Ill.—HENRY L. WHIPPLE, Quincy, Ill., *Secretary.*

May 13–15, 1915.—New York State Dental Society, Albany, N. Y.—A. P. BURKHART, 52 Genesee St., Auburn, N. Y., *Secretary.*

May 18–20, 1915.—Indiana State Dental Association, Claypoole Hotel, Indianapolis.—A. R. Ross, Lafayette, Ind., *Secretary.*

May 18–20, 1915.—Nebraska State Dental Society, Omaha.—H. J. PORTER, Cambridge, Neb., *Secretary.*

May 18–20, 1915.—Susquehanna Dental Association of Pennsylvania, Irem Temple, Wilkesbarre, Pa., GEO. C. KNOX, *Recording Secretary.*

May 19–21, 1915.—Vermont State Dental Society.—P. M. WILLIAMS, Rutland, Vt., *Secretary.*

May 19–22, 1915.—Texas Dental Association, Galveston, Texas.—C. M. MCCAULEY, *President.*

May 20–22, 1915.—Fifty-second meeting of Lake Erie Dental Association, Hotel Bartlett, Cambridge Springs, Pa.—F. A. SMITH, Erie, Pa., *Secretary.*

May 21–22, 1915.—The Upper Peninsula Dental Society, at Menominee, Michigan.—H. S. BUELL, Menominee, Mich., *Secretary.*

June 3–5, 1915.—Louisiana State Dental Association, New Orleans.—P. TROWBRIDGE, Franklin, La., *Secretary.*

June 8–10, 1915.—The 46th Annual Meeting of the Kentucky State Dental Association, School Building, Ashland, Ky.—CHAS. SHACKLETTE, 540 The Atherton Building, Louisville, Ky., *Secretary.*

June 10–12, 1915.—Missouri State Dental Association, Golden Jubilee Meeting, Jefferson City,—S. C. A. RUBEY, New York Life Bldg., Kansas City, Mo., *Secretary.*

June 11–12, 1915.—Maryland State Dental Association, Baltimore, Md.—F. F. DREW, 701 N. Howard St., Baltimore, Md., *Secretary.*

June 15, 1915.—South Carolina State Board of Dental Examiners, Columbia, S. C.—R. L. SPENCER, Bennettsville, S. C. *Secretary.*

June 17–19, 1915.—Forty-sixth annual meeting of the Georgia State Dental Association, Atlanta, Ga., at Piedmont Hotel.—M. M. FORBES, 803 Candler Bldg., Atlanta, *Secy.*

June 21, 1915.—North Carolina State Board of Dental Examiners, Wrightsville Beach, Wilmington, N. C.—F. L. HUNT, Asheville, N. C., *Secretary.*

June 22–24, 1915.—New Hampshire Dental Society, New Hotel Weirs, Weirs, N. H.—C. S. COPELAND, *President*; L. I. MOULTON, *Secretary.*

June 23–25, 1915.—North Carolina Dental Society, Wrightsville Beach, N. C.—R. M. SQUIRES, Wake Forest, N. C., *Secretary.*

July 13–15, 1915.—Wisconsin State Dental Society, Oconomowoc, Wis.—O. G. KRAUSE, *Secretary.*

July 21–24, 1915.—Forty-fifth annual convention of the New Jersey State Dental Society, Asbury Park; headquarters, Coleman House.—JOHN C. FORSYTH, *Secretary.*

August 30, 1915.—Federation Dentaire Internationale, San Francisco, Cal.—BURTON LEE THORPE, *Assistant Secretary.*

August 30–Sept. 1–9, 1915.—Panama-Pacific Dental Congress, San Francisco, Cal.—ARTHUR M. FLOOD, 240 Stockton St., San Francisco, Cal., *Secretary.*

November 4–6, 1915.—Virginia State Dental Association, Richmond.—C. B. GIFFORD, *Secy.*

December 7–9, 1915.—Ohio State Dental Society, Columbus, O.—F. R. CHAPMAN, *Secretary.*